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* * * * * * * * * * * * * Welcome to STN International * * * * * * * * * * *

| | | |
|---------|--------|--|
| NEWS 1 | | Web Page for STN Seminar Schedule - N. America |
| NEWS 2 | OCT 02 | CA/CAPLUS enhanced with pre-1907 records from Chemisches Zentralblatt |
| NEWS 3 | OCT 19 | BEILSTEIN updated with new compounds |
| NEWS 4 | NOV 15 | Derwent Indian patent publication number format enhanced |
| NEWS 5 | NOV 19 | WPIX enhanced with XML display format |
| NEWS 6 | NOV 30 | ICSD reloaded with enhancements |
| NEWS 7 | DEC 04 | LINPADOCLDB now available on STN |
| NEWS 8 | DEC 14 | BEILSTEIN pricing structure to change |
| NEWS 9 | DEC 17 | USPATOLD added to additional database clusters |
| NEWS 10 | DEC 17 | IMSDRUGCONF removed from database clusters and STN |
| NEWS 11 | DEC 17 | DGENE now includes more than 10 million sequences |
| NEWS 12 | DEC 17 | TOXCENTER enhanced with 2008 MeSH vocabulary in MEDLINE segment |
| NEWS 13 | DEC 17 | MEDLINE and LMEDLINE updated with 2008 MeSH vocabulary |
| NEWS 14 | DEC 17 | CA/CAPLUS enhanced with new custom IPC display formats |
| NEWS 15 | DEC 17 | STN Viewer enhanced with full-text patent content from USPATOLD |
| NEWS 16 | JAN 02 | STN pricing information for 2008 now available |
| NEWS 17 | JAN 16 | CAS patent coverage enhanced to include exemplified prophetic substances |
| NEWS 18 | JAN 28 | USPATFULL, USPAT2, and USPATOLD enhanced with new custom IPC display formats |
| NEWS 19 | JAN 28 | MARPAT searching enhanced |
| NEWS 20 | JAN 28 | USGENE now provides USPTO sequence data within 3 days of publication |
| NEWS 21 | JAN 28 | TOXCENTER enhanced with reloaded MEDLINE segment |
| NEWS 22 | JAN 28 | MEDLINE and LMEDLINE reloaded with enhancements |
| NEWS 23 | FEB 08 | STN Express, Version 8.3, now available |
| NEWS 24 | FEB 20 | PCI now available as a replacement to DPCI |
| NEWS 25 | FEB 25 | IFIREF reloaded with enhancements |
| NEWS 26 | FEB 25 | IMSPRODUCT reloaded with enhancements |
| NEWS 27 | FEB 29 | WPINDEX/WPIIDS/WPIX enhanced with ECLA and current U.S. National Patent Classification |
| NEWS 28 | MAR 31 | IFICDB, IFIPAT, and IFIUDB enhanced with new custom IPC display formats |
| NEWS 29 | MAR 31 | CAS REGISTRY enhanced with additional experimental spectra |
| NEWS 30 | MAR 31 | CA/CAPLUS and CASREACT patent number format for U.S. applications updated |
| NEWS 31 | MAR 31 | LPCI now available as a replacement to LDPCI |
| NEWS 32 | MAR 31 | EMBASE, EMBAL, and LEMBASE reloaded with enhancements |

NEWS EXPRESS FEBRUARY 08 CURRENT WINDOWS VERSION IS V8.3,
AND CURRENT DISCOVER FILE IS DATED 20 FEBRUARY 2008

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NEWS IPC8 For general information regarding STN implementation of IPC 8

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STRUCTURE FILE UPDATES: 31 MAR 2008 HIGHEST RN 1011196-35-2
DICTIONARY FILE UPDATES: 31 MAR 2008 HIGHEST RN 1011196-35-2

New CAS Information Use Policies, enter HELP USAGETERMS for details.

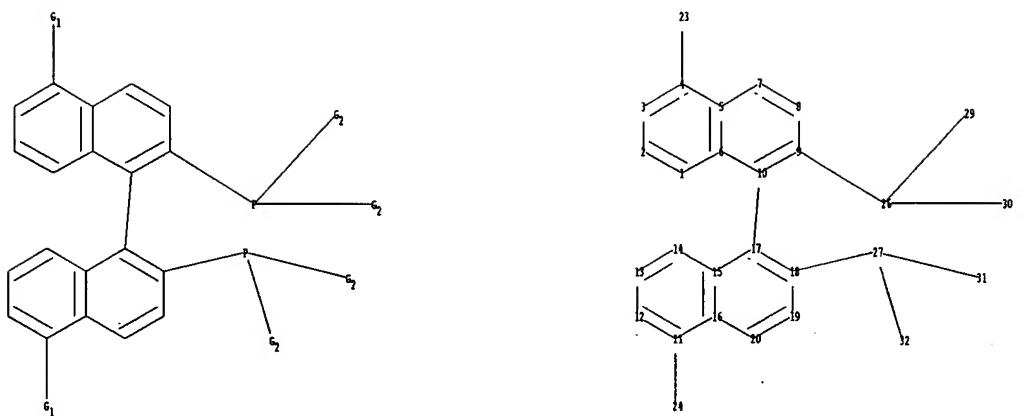
TSCA INFORMATION NOW CURRENT THROUGH January 9, 2008.

Please note that search-term pricing does apply when conducting SmartSELECT searches.

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<http://www.cas.org/support/stngen/stndoc/properties.html>

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=> Uploading C:\Program Files\Stnexp\Queries\APP-10010.str
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chain nodes :
 23 24 26 27 29 30 31 32
 ring nodes :
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
 chain bonds :
 4-23 9-26 10-17 11-24 18-27 26-29 26-30 27-31 27-32
 ring bonds :
 1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-10 7-8 8-9 9-10 11-12 11-16 12-13 13-14
 14-15 15-16 15-17 16-20 17-18 18-19 19-20
 exact/norm bonds :
 4-23 11-24 26-29 26-30 27-31 27-32
 exact bonds :
 9-26 10-17 18-27
 normalized bonds :
 1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-10 7-8 8-9 9-10 11-12 11-16 12-13 13-14
 14-15 15-16 15-17 16-20 17-18 18-19 19-20

G1:CH2,OH,COOH,CN,NH,NH2,Cb,Cy,Ak,O,S,N

G2:Cb,Cy,Hy,Ak

Match level :
 1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
 20:Atom 23:CLASS 24:CLASS 26:CLASS 27:CLASS 29:CLASS 30:CLASS 31:CLASS
 32:CLASS

L1 STRUCTURE UPLOADED

=> D L1
L1 HAS NO ANSWERS
L1 STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.

=> S L1 FULL
FULL SEARCH INITIATED 08:47:19 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 820 TO ITERATE

100.0% PROCESSED 820 ITERATIONS 71 ANSWERS
SEARCH TIME: 00.00.01

L2 71 SEA SSS FUL L1

| | SINCE FILE ENTRY | TOTAL SESSION |
|----------------------|------------------|---------------|
| COST IN U.S. DOLLARS | | |
| FULL ESTIMATED COST | 179.74 | 179.95 |

FILE 'CAPLUS' ENTERED AT 08:47:31 ON 01 APR 2008
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FILE LAST UPDATED: 31 Mar 2008 (20080331/ED)

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=> S L2
L3 30 L2

=> D L3 IBIB ABS HITSTR 1-30

L3 ANSWER 1 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:191778 CAPLUS
DOCUMENT NUMBER: 148:240545
TITLE: Easily recoverable polymers having
bis(diphenylphosphino)binaphthyl group useful as

INVENTOR(S): addition reaction or reduction catalysts
 Shimada, Toyoshi; Takenaka, Naomi; Goshima, Gakuto;
 Hosoi, Hiroyuki
 PATENT ASSIGNEE(S): Kyoeisha Chemical Co., Ltd., Japan
 SOURCE: PCT Int. Appl., 40pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| WO 2008018195 | A1 | 20080214 | WO 2007-JP54845 | 20070312 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN,
KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN,
MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS,
RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ,
UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW,
GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
BY, KG, KZ, MD, RU, TJ, TM | | | | |

PRIORITY APPLN. INFO.: JP 2006-217013 A 20060809

AB Title polymers with mol. weight 1,500-10,000 used as catalysts for asym. 1,4-addition reaction or asym. reduction reaction are prepared from racemic or optically active 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl compound having its 5-position substituted with the unsatd. end of one (meth)acryloyl of a compound having multiple (meth)acryloyls and another 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl compound having its 5'-position substituted with the unsatd. end of another (meth)acryloyl of the compound having multiple (meth)acryloyls and the reduction catalysts comprise the polymers and transition metals. Thus, 1 mol 1,1'-(1,1'-binaphthalene)-2,2'-diylbis[1,1-diphenyl-phosphine] was oxidized with 20 mol 35% hydrogen peroxide, the resulting 1,1'-(1,1'-binaphthalene)-2,2'-diylbis[1,1-diphenyl-phosphine oxide] was reacted with bis(pyridine)iodonium tetrafluoroborate in trifluorosulfonic acid to give 1,1'-(1R)-5,5'-diido[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl-phosphine oxide], 0.225 mmol of which was polymerized with 0.458 mmol Light Acrylate NP-A in the presence of 2.9 mg palladium acetate and 13.9 mg triphenylphosphine in 20 mL DMF at 130° for 48 h, reduced at 140° for 48 h in 30 mL xylene containing 2.2 mL trichlorosilane and 0.7 mL triethylamine to give a copolymer with Mw 4889, 50 mg of which was heated with 1,3-cyclohexenone 0.312, bis(η²-ethene)(2,4-pantanediionato-κO,κO')-rhodium 0.02, and phenylboronic acid 2.0 mmol at 100° for 13 h to give (R)-3-phenylcyclohexanone with purity 80% initially and 63% when recycled copolymer was used.

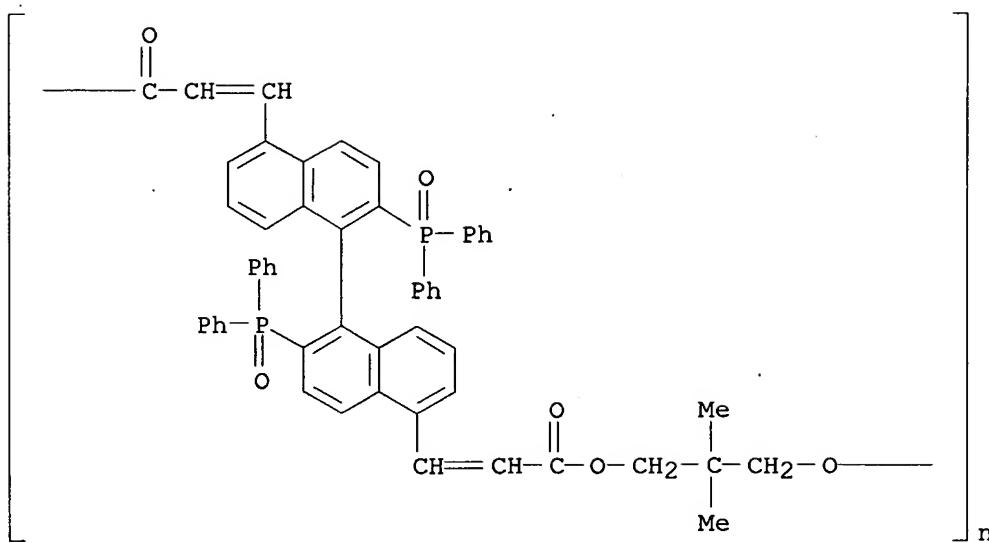
IT 1005774-18-4DP, reduced, complex with rhodium
 1005774-20-8DP, reduced 1006052-88-5P
 1006052-89-6P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(easily recoverable polymers having bis(diphenylphosphino)binaphthyl group useful as addition reaction or reduction catalysts)

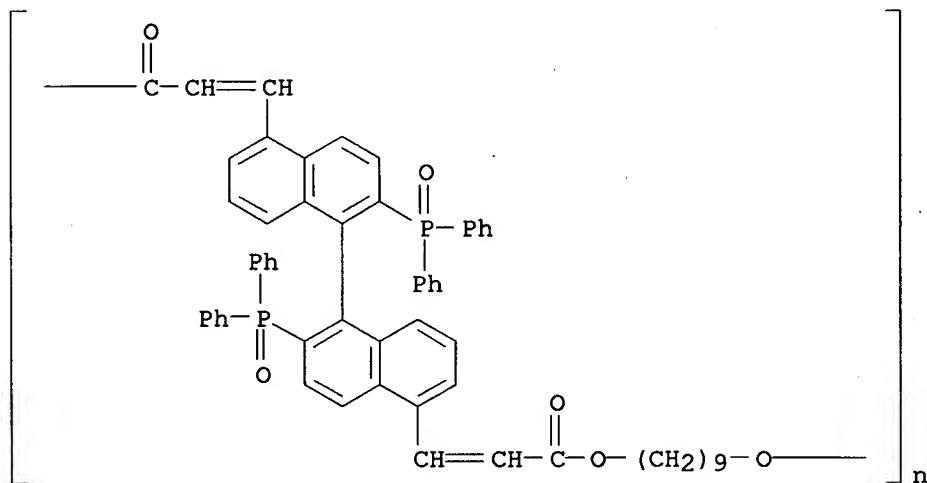
RN 1005774-18-4 CAPLUS

CN Poly[oxy(2,2-dimethyl-1,3-propanediyl)oxy(1-oxo-2-propene-1,3-diyl)][(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl](3-oxo-1-propene-1,3-diyl)] (CA INDEX NAME)



RN 1005774-20-8 CAPLUS

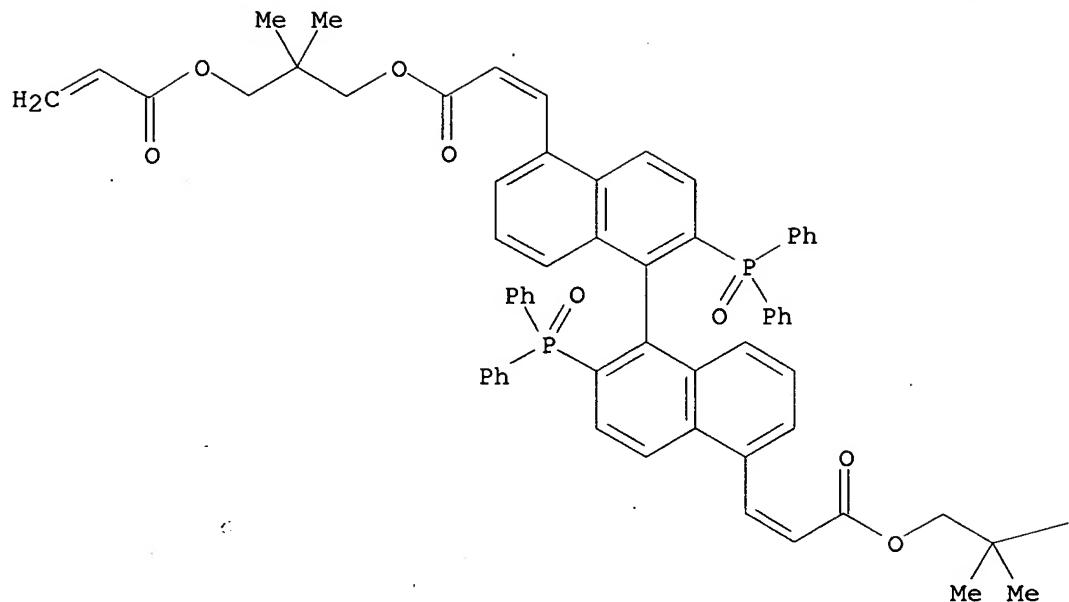
CN Poly[oxy-1,9-nanediyl]oxy(1-oxo-2-propene-1,3-diyl)[(1R)-2,2'-bis(diphenylphosphoryl)[1,1'-binaphthalene]-5,5'-diyl](3-oxo-1-propene-1,3-diyl)] (CA INDEX NAME)



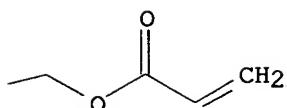
RN 1006052-88-5 CAPLUS

CN INDEX NAME NOT YET ASSIGNED

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PAGE 1-B



RN 1006052-89-6 CAPLUS

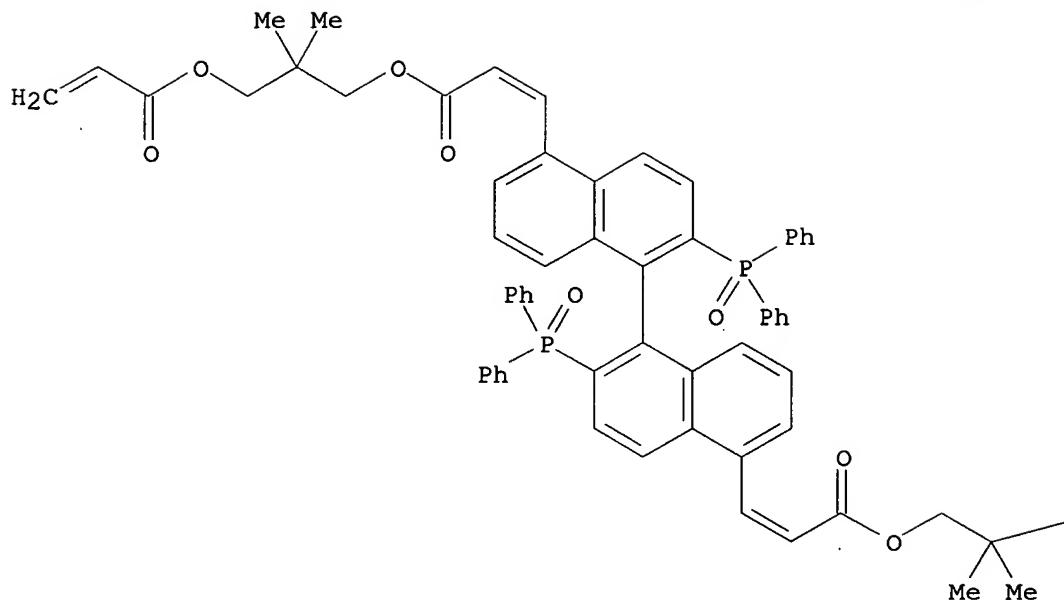
CN 2-Propenoic acid, 3,3'-(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl]bis-, 1,1'-bis[2,2-dimethyl-3-[(1-oxo-2-propen-1-yl)oxy]propyl] ester, homopolymer (CA INDEX NAME)

CM 1

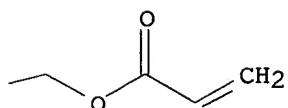
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CMF C66 H60 O10 P2

PAGE 1-A



PAGE 1-B

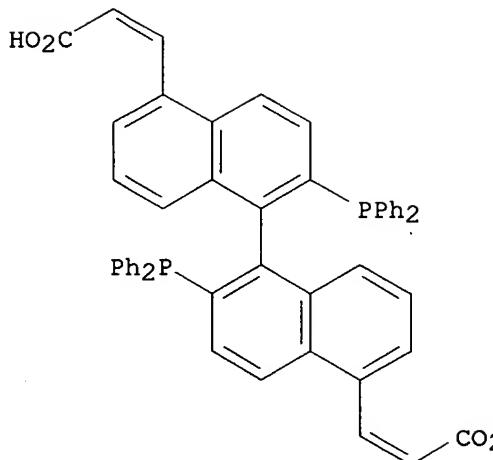


IT 1006052-74-9P

RL: IMF (Industrial manufacture); MSC (Miscellaneous); PREP (Preparation)
(model compound for backbone; easily recoverable polymers having
bis(diphenylphosphino)binaphthyl group useful as addition reaction or
reduction catalysts)

RN 1006052-74-9 CAPLUS

CN INDEX NAME NOT YET ASSIGNED



REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:1136646 CAPLUS

DOCUMENT NUMBER: 148:34059

TITLE: Preparation of functionalized aryl(diallyl)ethoxysilanes and their palladium-catalyzed coupling reactions giving sol-gel precursors

AUTHOR(S): Maegawa, Yoshifumi; Nagano, Toyohiro; Yabuno, Tatsuya; Nakagawa, Hiroki; Shimada, Toyoshi

CORPORATE SOURCE: Department of Chemical Engineering, Nara National College of Technology, 22 Yata-cho, Yamatokoriyama, Nara, 639-1080, Japan

SOURCE: Tetrahedron (2007), 63(46), 11467-11474

CODEN: TETRAB; ISSN: 0040-4020

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A series of mol. building blocks containing allylsilyl groups, which can be incorporated into the appropriate sol-gel precursors as fragments, were prepared. The allylsilyl group is retained unchanged over the course of all reactions giving sol-gel precursors and behave as the synthetic equivalent of alkoxyisilyl groups toward sol-gel polymerization, but are stable enough to allow

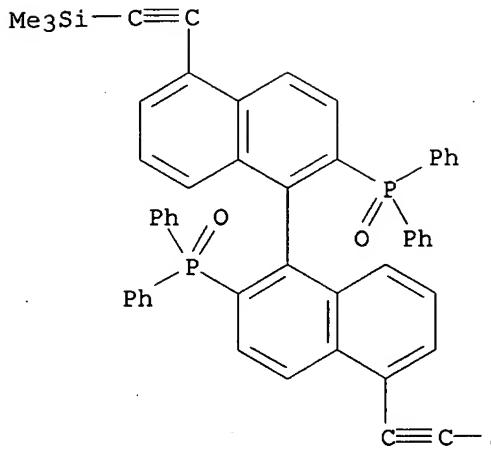
purification by silica gel chromatog. These allylsilanes were successfully used as building blocks to construct functional sol-gel precursors via palladium-catalyzed coupling reactions.

IT 959611-94-0

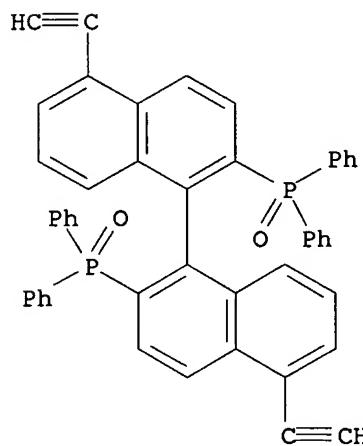
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of functionalized aryl(diallyl)ethoxysilanes and their palladium-catalyzed coupling reactions giving sol-gel precursors)

RN 959611-94-0 CAPLUS

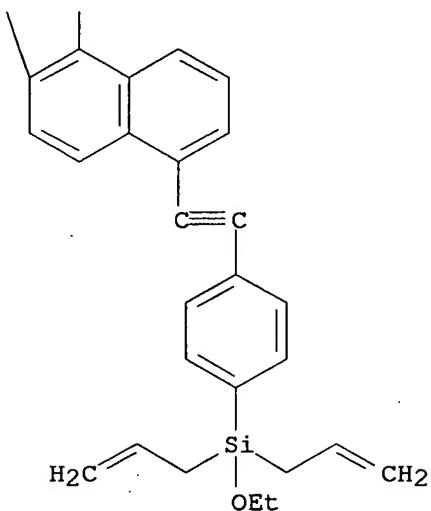
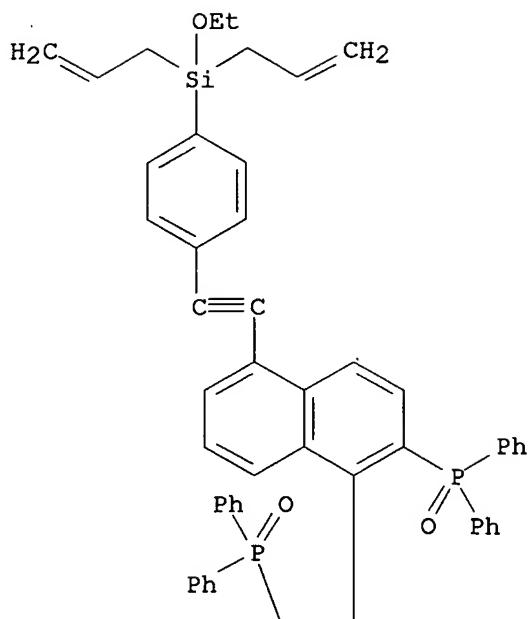
CN Phosphine oxide, 1,1'-(1S)-5,5'-bis[2-(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



IT 959611-95-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of functionalized aryl(diallyl)ethoxysilanes and their palladium-catalyzed coupling reactions giving sol-gel precursors)
 RN 959611-95-1 CAPLUS
 CN Phosphine oxide, 1,1'-(1S)-5,5'-diethynyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



IT 959611-96-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of functionalized aryl(diallyl)ethoxysilanes and their palladium-catalyzed coupling reactions giving sol-gel precursors)
 RN 959611-96-2 CAPLUS
 CN Phosphine oxide, 1,1'-(1S)-5,5'-bis[2-[4-(ethoxydi-2-propen-1-ylsilyl)phenyl]ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

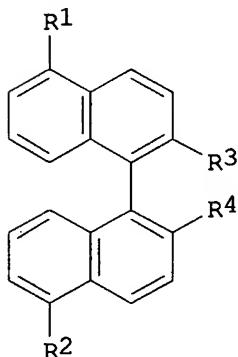
L3 ANSWER 3 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2007:352054 CAPLUS
 DOCUMENT NUMBER: 146:380115
 TITLE: Preparation of binaphthyls as asymmetric ligands
 INVENTOR(S): Shimada, Toyoshi; Kakiuchi, Kiyozo
 PATENT ASSIGNEE(S): Nara Institute of Science and Technology, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 27pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--------|------------|----------------------------------|----------------------|
| JP 2007077022 | A | 20070329 | JP 2005-262628
JP 2005-262628 | 20050909
20050909 |
| PRIORITY APPLN. INFO.: | | | | |
| OTHER SOURCE(S): | MARPAT | 146:380115 | | |
| GI | | | | |



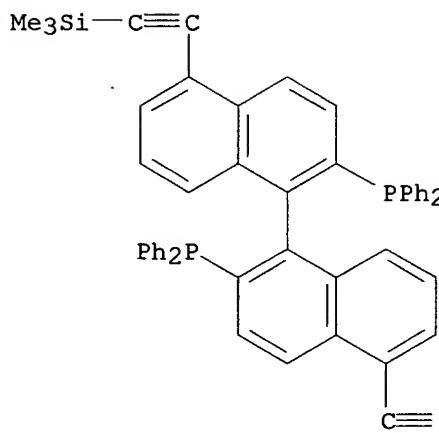
I

AB Binaphthyls I [R1, R2 = H, (un)substituted alkyl, alkenyl, alkynyl, aryl, silyl; R1 = R2 ≠ H; R3, R4 = POR52, PR52; R5 = (un)substituted Ph] are prepared by oxidation of 2,2'-bis(diphenylphosphino)-1,1'-binaphthyls, iodination of the resulting oxides with bis(pyridine)iodonium tetrafluoroborate (II), followed by cross-coupling of the obtained iodinated binaphthyls with transition metals. Thus, (R)-BINAP dioxide was iodinated with II, cross-coupled with trimethylsilylacetylene in the presence of CuI and PdCl₂(PPh₃)₂, and treated with LiAlH₄ to give (R)-I (R1 = R2 = C.tpbond.CSiMe₃, R3 = R4 = PPh₂) (III). 2-Cyclohexen-1-one was treated with III, PhB(OH)₂, and Rh(acac)(C₂H₄)₂ to give 99% optically active 3-phenylcyclohexan-1-one with 97.3% ee.

IT 871350-62-8P
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of binaphthyls as asym. ligands by cross-coupling of iodo binaphthyls)

RN 871350-62-8 CAPLUS

CN Phosphine, 1,1'-(1R)-5,5'-bis[2-(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

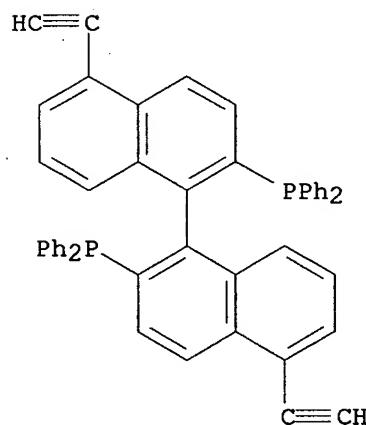


IT 871350-64-0P 930794-20-0P 930794-21-1P
 930794-22-2P 930794-23-3P 930794-24-4P
 930794-25-5P 930794-26-6P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)
 (preparation of binaphthyls as asym. ligands by cross-coupling of
 iodo binaphthyls)

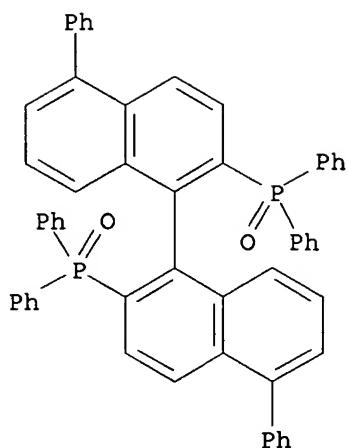
RN 871350-64-0 CAPLUS

CN Phosphine, 1,1'-(1R)-5,5'-diethynyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



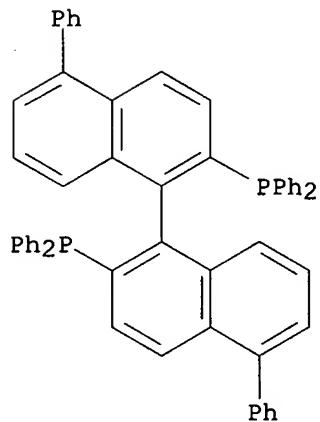
RN 930794-20-0 CAPLUS

CN Phosphine oxide, 1,1'-(1R)-5,5'-diphenyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



RN 930794-21-1 CAPLUS

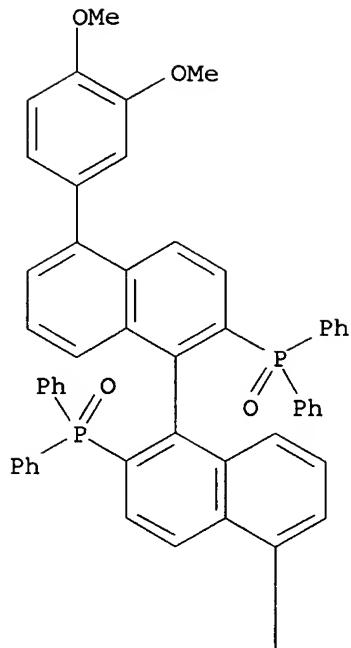
CN Phosphine, 1,1'-[{(1R)-5,5'-diphenyl[1,1'-binaphthalene]-2,2'-diyl}bis[1,1-diphenyl- (CA INDEX NAME)]]



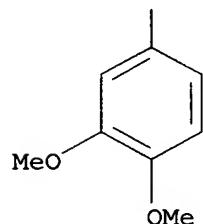
RN 930794-22-2 CAPLUS

CN Phosphine oxide, 1,1'-[{(1R)-5,5'-bis(3,4-dimethoxyphenyl)[1,1'-binaphthalene]-2,2'-diyl}bis[1,1-diphenyl- (CA INDEX NAME)]]

PAGE 1-A



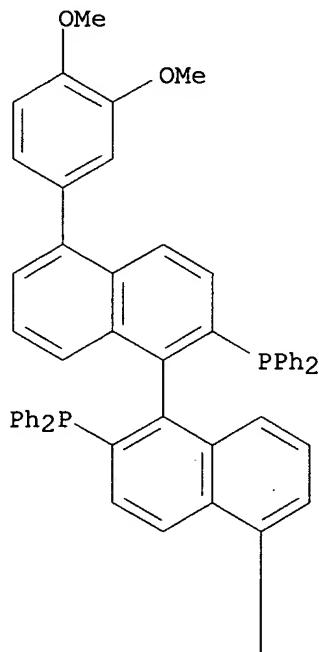
PAGE 2-A



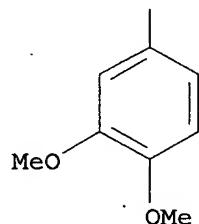
RN 930794-23-3 CAPLUS

CN Phosphine, 1,1'-(1R)-5,5'-bis(3,4-dimethoxyphenyl)[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

PAGE 1-A



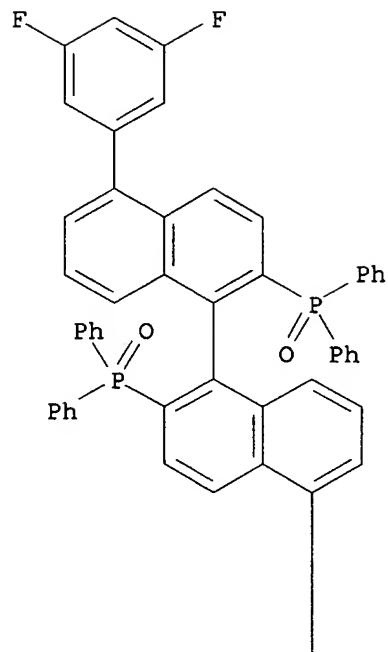
PAGE 2-A



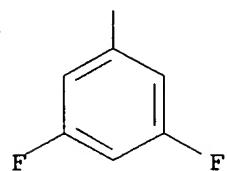
RN 930794-24-4 CAPLUS

CN Phosphine oxide, 1,1'-[*(1R)*-5,5'-bis(3,5-difluorophenyl)[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

PAGE 1-A

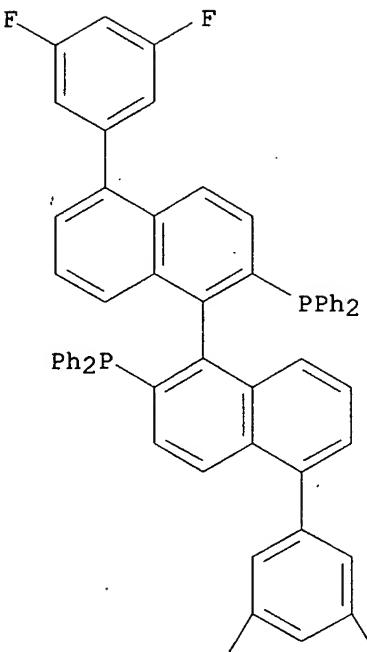


PAGE 2-A



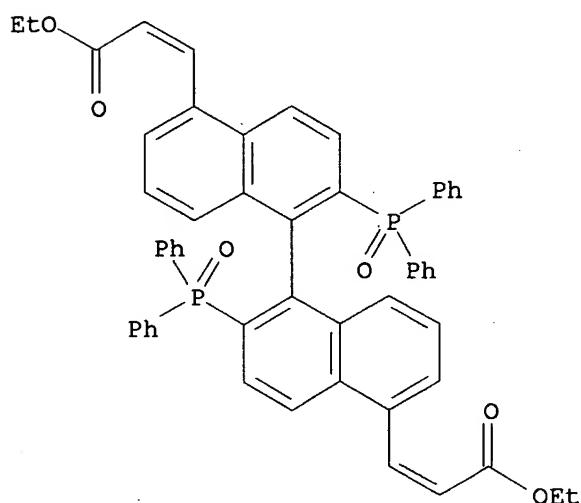
RN 930794-25-5 CAPLUS

CN Phosphine, 1,1'-(1R)-5,5'-bis(3,5-difluorophenyl)[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



RN 930794-26-6 CAPLUS

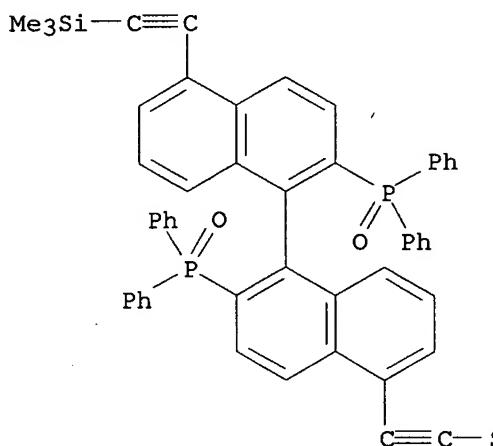
CN 2-Propenoic acid, 3,3'-(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl]bis-, 1,1'-diethyl ester, (2E,2'E)- (CA INDEX NAME)



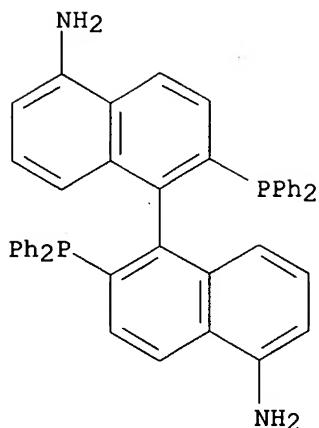
IT 871350-60-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of binaphthyls as asym. ligands by cross-coupling of iodobinaphthyls)
 RN 871350-60-6 CAPLUS
 CN Phosphine oxide, 1,1'-(1R)-5,5'-bis[2-(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

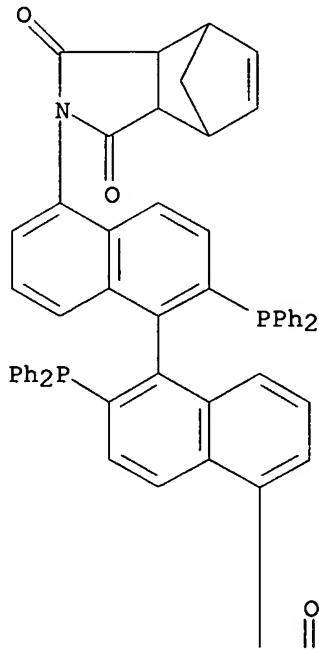


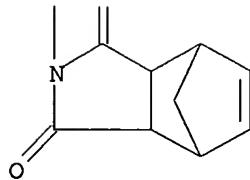
L3 ANSWER 4 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2007:235675 CAPLUS
 DOCUMENT NUMBER: 146:482330
 TITLE: A Highly Reusable Catalyst for Enantioselective Ketone Hydrogenation. Catalyst-Organic Frameworks by Alternating ROMP Assembly
 AUTHOR(S): Ralph, Corbin K.; Bergens, Steven H.
 CORPORATE SOURCE: Department of Chemistry, University of Alberta, Edmonton, AB, T6G 2G2, Can.
 SOURCE: Organometallics (2007), 26(7), 1571-1574
 CODEN: ORGND7; ISSN: 0276-7333
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 146:482330
 AB The alternating ROMP assembly of trans-RuCl₂((R)-5,5'-dinorimido-BINAP)(Py)₂ (5) and COE using RuCl₂(:CHPh)(PCy₃)₂ (7) as the catalyst resulted in an extended, three-dimensional catalyst-organic framework. The catalyst-organic framework was converted to contain Noyori-type active sites that were recycled for 25 times at low catalyst loadings without loss in enantioselectivity or activity and without detectable Ru leaching.
 IT 244260-43-3, (R)-5,5'-Diamino-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reusable catalyst for enantioselective ketone hydrogenation made of alternating ROMP polymer frameworks)
 RN 244260-43-3 CAPLUS
 CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)- (CA INDEX NAME)



IT 935886-69-4P, (R)-5,5'-N-Bis(cis-5-norbornene-2,3-endo-dicarboximido)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (reusable catalyst for enantioselective ketone hydrogenation made of alternating ROMP polymer frameworks)
 RN 935886-69-4 CAPLUS
 CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 2,2'-(*(1R)*-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl)bis[3a,4,7,7a-tetrahydro-, (*3aR,3'aR,4S,4'S,7R,7'R,7aS,7'aS*) - (CA INDEX NAME)

PAGE 1-A





REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 30 CAPIUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:230189 CAPIUS

DOCUMENT NUMBER: 146:462111

TITLE: Enantioselective Hydrogenation of Quinolines Catalyzed by Ir(BINAP)-Cored Dendrimers: Dramatic Enhancement of Catalytic Activity

AUTHOR(S): Wang, Zhi-Jian; Deng, Guo-Jun; Li, Yong; He, Yan-Mei; Tang, Wei-Jun; Fan, Qing-Hua

CORPORATE SOURCE: Beijing National Laboratory for Molecular Sciences, Center for Chemical Biology, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop.

Rep. China

SOURCE: Organic Letters (2007), 9(7), 1243-1246

CODEN: ORLEF7; ISSN: 1523-7060

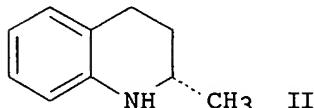
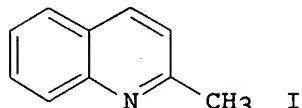
PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 146:462111

GI



AB The asym. hydrogenation of quinolines, e.g. I, catalyzed by chiral dendritic catalysts derived from BINAP gave the corresponding products, e.g. II, with high enantioselectivities (up to 93%), excellent catalytic activities (TOF up to 3450 h⁻¹), and productivities (TON up to 43,000). In addition, the third-generation catalyst could be recovered by precipitation

and filtration and reused at least six times with similar enantioselectivity.

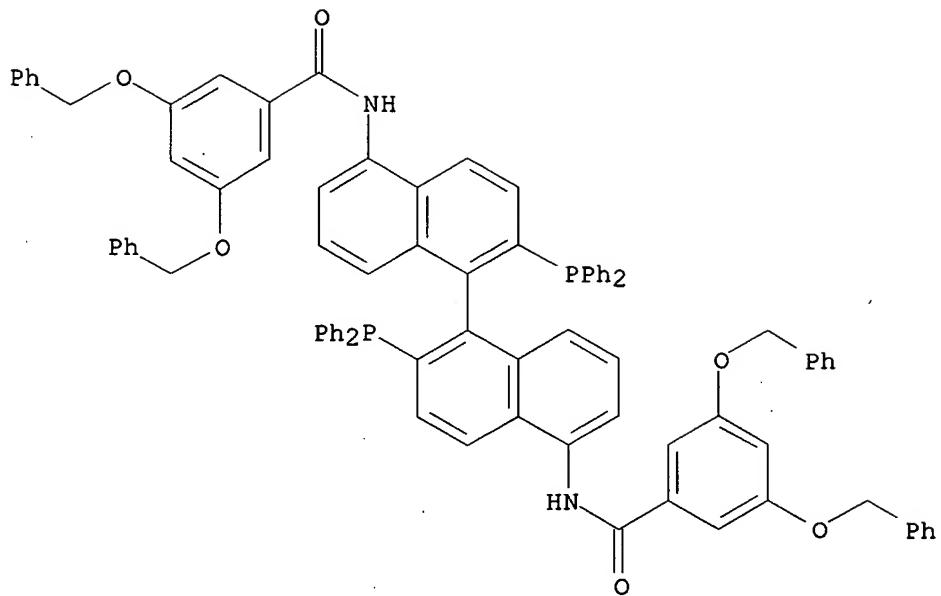
IT 935536-82-6P 935536-83-7P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(asym. synthesis of tetrahydroquinolines via Ir(BINAP)-cored dendrimer-catalyzed stereoselective hydrogenation of quinolines)

RN 935536-82-6 CAPIUS

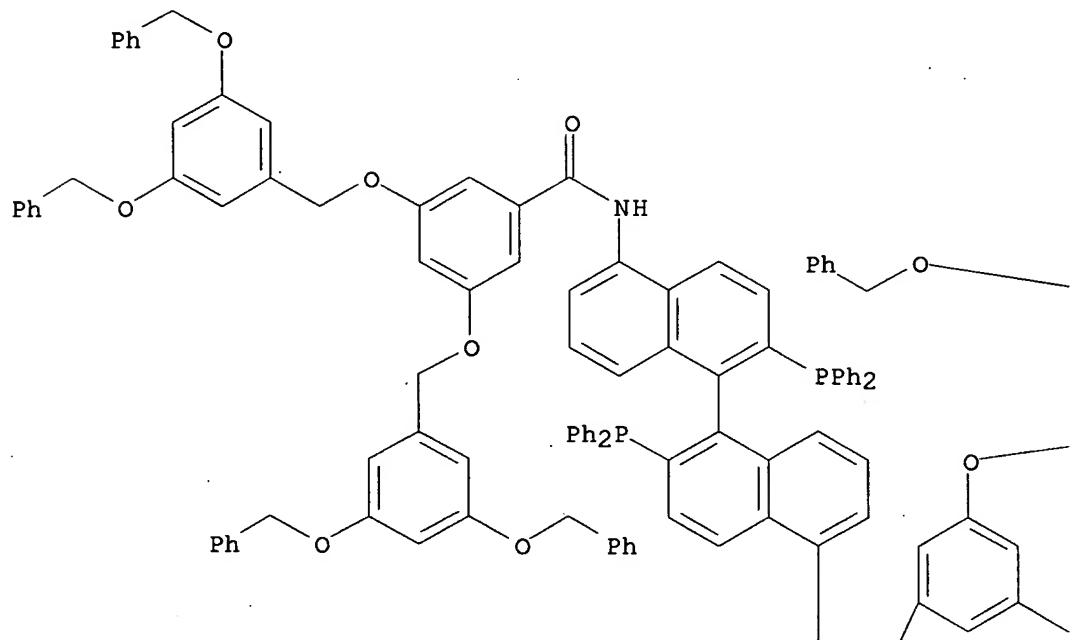
CN Benzamide, N,N'-(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)- (CA INDEX NAME)

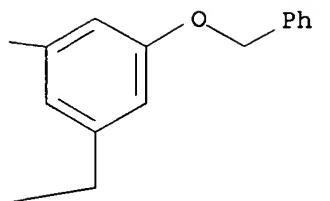


RN 935536-83-7 CAPLUS

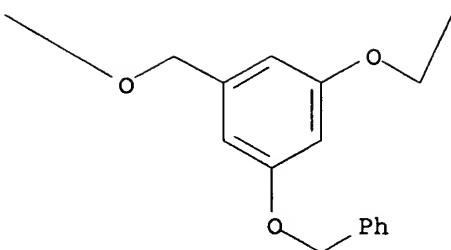
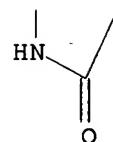
CN Benzamide, N,N'-(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)phenyl]methoxy]- (CA INDEX NAME)

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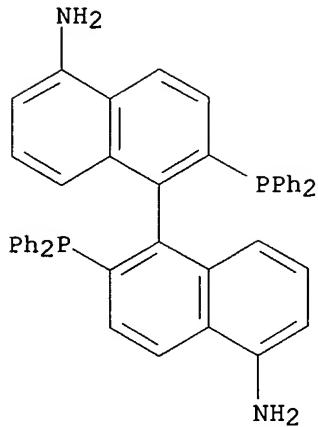


IT 244260-42-2

RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of dendritic BINAP ligands via amidation of Frechet-type
 polyaryl ether dendrons with diamino BINAP)

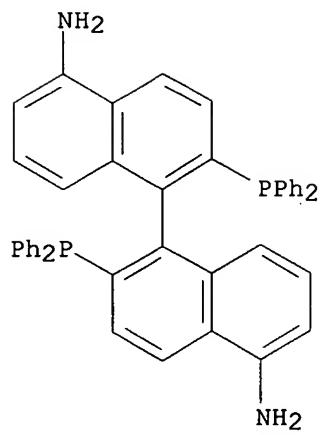
RN 244260-42-2 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1S)-
 (CA INDEX NAME)



REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:1183926 CAPLUS
 DOCUMENT NUMBER: 147:343481
 TITLE: Polyethylene glycol as an environmentally friendly and recyclable reaction medium for enantioselective hydrogenation
 AUTHOR(S): Zhou, Hai-Feng; Fan, Qing-Hua; Tang, Wei-Jun; Xu, Li-Jin; He, Yan-Mei; Deng, Guo-Jun; Zhao, Li-Wen; Gu, Lian-Quan; Chan, Albert S. C.
 CORPORATE SOURCE: School of Chemistry and Chemical Engineering, Sun Yat-Sen University, Guangzhou, 510275, Peop. Rep. China
 SOURCE: Advanced Synthesis & Catalysis (2006), 348(15), 2172-2182
 PUBLISHER: CODEN: ASCAF7; ISSN: 1615-4150 Wiley-VCH Verlag GmbH & Co. KGaA
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 147:343481
 AB Polyethylene glycol (PEG) was found to be an inexpensive, non-toxic and recyclable reaction medium for ruthenium- and rhodium-catalyzed asym. hydrogenation of 2-arylacrylic acids (Ru-catalyzed C=C bond reduction), enamides (Rh-catalyzed C=C bond reduction), β -keto esters and simple aromatic ketones (Ru-catalyzed C=O bond reduction). In all cases, high catalytic activities and enantioselectivities have been achieved, which are comparable to those obtained in conventional organic solvent systems. The Ru and Rh catalysts prepared with com. available chiral diphosphine ligands could be readily recycled by simple extraction, as in the case of ionic liqs., and reused up to nine times without obvious loss of catalytic activity and enantioselectivity. The reduced products were obtained from the exts. in high isolated yields. These results indicate that PEGs as new reaction media are attractive alternatives to room temperature ionic liqs.
 IT 244260-42-2 308795-87-1
 RL: CAT (Catalyst use); USES (Uses)
 (polyethylene glycol as an environmentally friendly and recyclable reaction medium for enantioselective hydrogenation)
 RN 244260-42-2 CAPLUS
 CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1S)- (CA INDEX NAME)



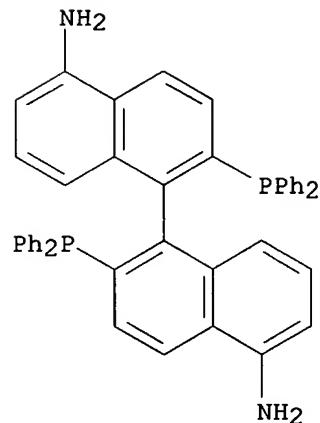
RN 308795-87-1 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine and α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl) (CA INDEX NAME)

CM 1

CRN 244260-43-3

CMF C44 H34 N2 P2

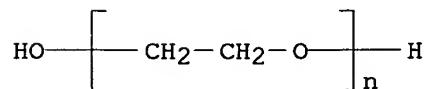


CM 2

CRN 25322-68-3

CMF (C2 H4 O)n H2 O

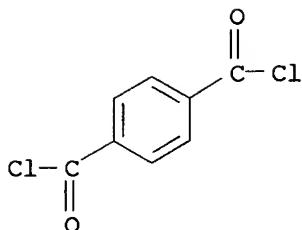
CCI PMS



CM 3

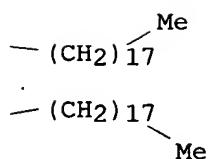
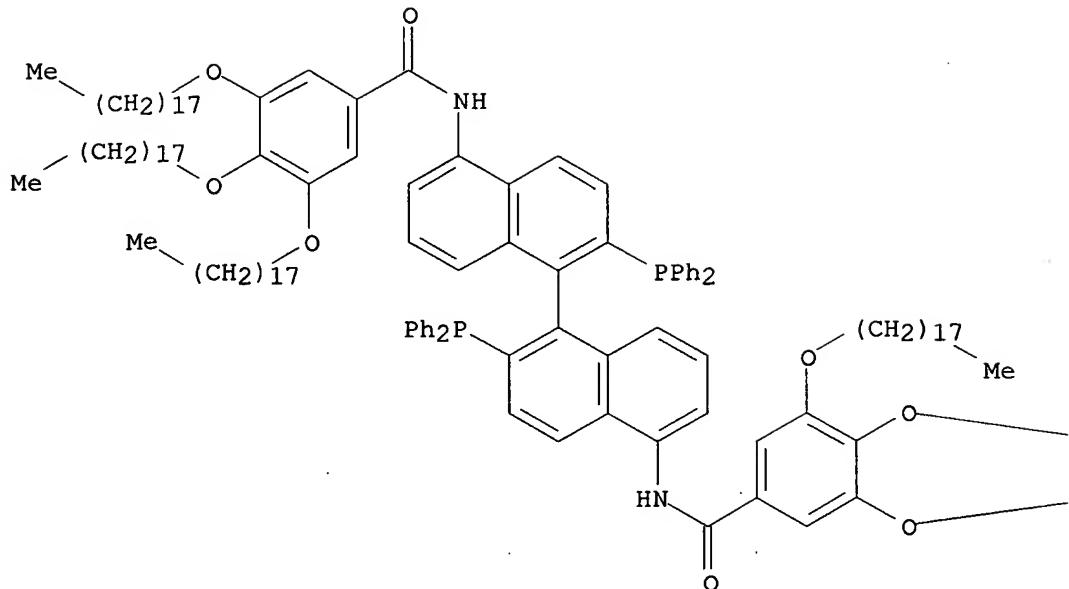
CRN 100-20-9

CMF C8 H4 Cl2 O2



REFERENCE COUNT: 126 THERE ARE 126 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L3 ANSWER 7 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:184010 CAPLUS
 DOCUMENT NUMBER: 144:432506
 TITLE: Thermomorphic System with Non-Fluorous Phase-Tagged Ru(BINAP) Catalyst: Facile Liquid/Solid Catalyst Separation and Application in Asymmetric Hydrogenation
 AUTHOR(S): Huang, Yi-Yong; He, Yan-Mei; Zhou, Hai-Feng; Wu, Lei; Li, Bao-Lin; Fan, Qing-Hua
 CORPORATE SOURCE: Laboratory of Chemical Biology, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
 SOURCE: Journal of Organic Chemistry (2006), 71(7), 2874-2877
 CODEN: JOCEAH; ISSN: 0022-3263
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 144:432506
 AB A thermomorphic BINAP derivative was prepared from (S)-5,5'-diamino BINAP and 3,4,5-[Me(CH₂)₁₇O]3C₆H₂CO₂H and applied to Ru-catalyzed asym. hydrogenation of β-keto esters under homogeneous conditions in 3:1 EtOH-1,4-dioxane at 60 °C with enantioselectivity ≤ 98%. The Ru catalyst was easily recovered by simple cooling and precipitation and could be used for at least four cycles without any loss of enantioselectivity.
 IT 885315-09-3P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (thermomorphic Ru(BINAP) catalyst for asym. hydrogenation)
 RN 885315-09-3 CAPLUS
 CN Benzamide, N,N'-(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,4,5-tris(octadecyloxy)- (9CI) (CA INDEX NAME)

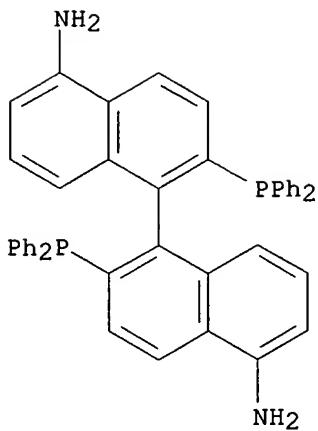


IT 244260-42-2, (S)-5,5'-Diamino-2,2'-bis (diphenylphosphino)-1,1'-binaphthol

RL: RCT (Reactant); RACT (Reactant or reagent)
(thermomorphic Ru(BINAP) catalyst for asym. hydrogenation)

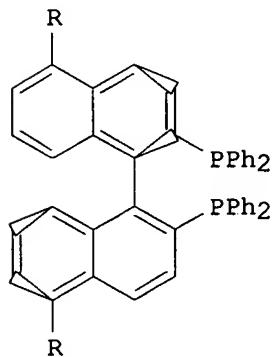
RN 244260-42-2 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1S)-
(CA INDEX NAME)



REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:1146696 CAPLUS
 DOCUMENT NUMBER: 144:51305
 TITLE: Facile preparation of a new BINAP-based building block, 5,5'-diiodoBINAP, and its synthetic application
 Shimada, Toyoshi; Suda, Masahiko; Nagano, Toyohiro;
 Kakiuchi, Kiyomi
 AUTHOR(S):
 CORPORATE SOURCE: Department of Chemical Engineering, Nara National College of Technology, Nara, 639-1080, Japan
 SOURCE: Journal of Organic Chemistry (2005), 70(24), 10178-10181
 PUBLISHER: CODEN: JOCEAH; ISSN: 0022-3263
 DOCUMENT TYPE: American Chemical Society
 LANGUAGE: Journal
 OTHER SOURCE(S): English
 CASREACT 144:51305
 GI



I

AB Nonracemic bis(diphenylphosphino)binaphthylidiphosphines I ($R = I$, $Me_3SiC.tplbond.C$, $HC.tplbond.C$) are prepared chemoselectively using a chemo- and regioselective iodination of (R)-BINAP P,P' -dioxide with bis(pyridine)iodonium tetrafluoroborate as the key step. Treatment of (R)-BINAP dioxide with 3 equivalent of bis(pyridine)iodonium tetrafluoroborate at 25° for 20 h gives the dioxide of I ($R = I$) in 92% yield with no formation of regioisomers; reaction of (R)-BINAP dioxide with 2 equivalent of bis(pyridine)iodonium tetrafluoroborate for at -30° gives

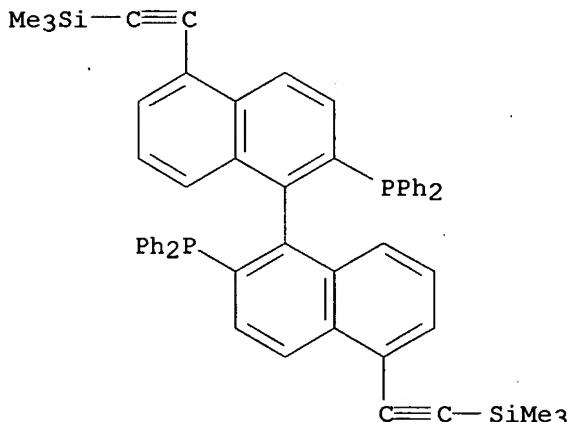
5-iodo-2,2'-bis(diphenylphosphoryl)-1,1'-binaphthyl in 15% yield because of difficulty in separating the monoiodo compound from starting material. Deoxygenation of the dioxide of I ($R = I$) with trichlorosilane gives I ($R = I$); Sonogashira coupling of the dioxide of I ($R = I$) with trimethylsilylacetylene followed by deoxygenation with Me triflate and lithium aluminum hydride gives I ($R = \text{Me}_3\text{SiC.tpbond.C}$), and cleavage of the silyl groups with tetrabutylammonium fluoride yields I ($R = \text{HC.tpbond.C}$). Enantioselective rhodium-catalyzed addition of phenylboronic acid to 2-cyclohexen-1-one in the presence of either BINAP or 5,5'-disubstituted binaphthylidiphosphines yields nonracemic 3-phenylcyclohexanone in 97-99% yields and in 97% ee; while I ($R = I$, $\text{Me}_3\text{SiC.tpbond.C}$) provide 3-phenylcyclohexanone with similar yields and enantioselectivities to those obtained using (R)-BINAP, reaction in the presence of I ($R = \text{HC.tpbond.C}$) leads to no product.

IT 871350-62-8P

RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (asym. rhodium-catalyzed addition of phenylboronic acid to cyclohexenone using binaphthylidiphosphines as chiral ligands)

RN 871350-62-8 CAPLUS

CN Phosphine, 1,1'-($(1R)$ -5,5'-bis[2-(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

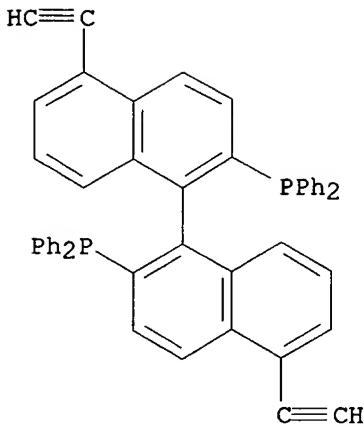


IT 871350-64-0P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (asym. rhodium-catalyzed addition of phenylboronic acid to cyclohexenone using binaphthylidiphosphines as chiral ligands)

RN 871350-64-0 CAPLUS

CN Phosphine, 1,1'-($(1R)$ -5,5'-diethynyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

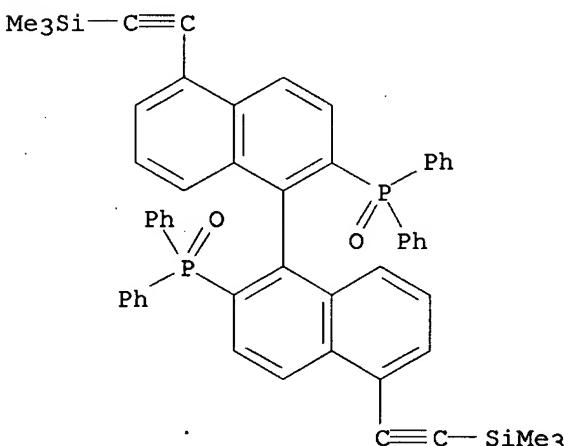


IT 871350-60-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(asym. rhodium-catalyzed addition of phenylboronic acid to cyclohexenone using binaphthyldiphosphines as chiral ligands)

RN 871350-60-6 CAPLUS

CN Phosphine oxide, 1,1'-(1R)-5,5'-bis[2-(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



REFERENCE COUNT:

40

THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 9 OF 30 CAPIUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:1020733 CAPLUS

DOCUMENT NUMBER: 143:306189

TITLE: Preparation of pyridinecarboxamides with recyclable catalysts and without the use of halogenation agents

Shimazu, Hidetaka; Tamashima, Tomoyuki

INVENTOR(S): Koei Chemical Co., Ltd., Japan

PATENT ASSIGNEE(S): Jpn. Kokai Tokkyo Koho, 18 pp.

SOURCE: CODEN: JKXXAF

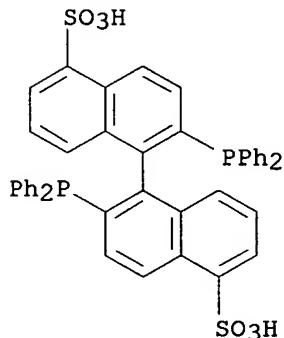
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|---|----------|-----------------|----------|
| JP 2005255544 | A | 20050922 | JP 2004-65682 | 20040309 |
| PRIORITY APPLN. INFO.: | | | | |
| AB Pyridinecarboxamides are prepared by isomerization of pyridinealdoximes in multiphase solvent mixts. in the presence of (A) mixts. of hydrophilic phosphines and transition metals, or (B) water-soluble complexes comprising the phosphines and metals. Thus, 4-pyridinealdoxime was refluxed with sulfonated BINAP and RuCl ₂ (cod) in 1-butyl-4-methylimidazolium PF ₆ salt and C ₆ H ₆ for 24 h, then the ionic liquid was recovered, which was used in the same reaction 4 more times. Total yield of 4-pyridinecarboxamide was 94.5%. | | | | |
| IT | 864956-92-3P, Disodium 2,2'-bis(diphenylphosphino)-[1,1'-binaphthalene]-5,5'-disulfonate
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of pyridinecarboxamides from pyridinealdoximes with recyclable catalysts in multiphase solvent mixts.) | | | |
| RN | 864956-92-3 CAPLUS | | | |
| CN | [1,1'-Binaphthalene]-5,5'-disulfonic acid, 2,2'-bis(diphenylphosphino)-, disodium salt (9CI) (CA INDEX NAME) | | | |



●2 Na

L3 ANSWER 10 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:988324 CAPLUS
 DOCUMENT NUMBER: 142:430342
 TITLE: Dendronized poly(Ru-BINAP) complexes: Highly effective and easily recyclable catalysts for asymmetric hydrogenation
 AUTHOR(S): Deng, Guo-Jun; Yi, Bing; Huang, Yi-Yong; Tang, Wei-Jun; He, Yan-Mei; Fan, Qing-Hua
 CORPORATE SOURCE: Laboratory of Chemical Biology, Center for Molecular Science, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
 SOURCE: Advanced Synthesis & Catalysis (2004), 346(12), 1440-1444
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 142:430342
 AB A new kind of dendronized polymeric chiral BINAP ligands has been synthesized and applied to the Ru-catalyzed asym. hydrogenation of simple aryl ketones and 2-arylacrylic acids. These dendronized poly(Ru-BINAP)

catalysts exhibited high catalytic activity and enantioselectivity, very similar to those obtained with the corresponding parent Ru(BINAP) and the Ru(BINAP)-cored dendrimers. It was found that the pendant dendrons had a major impact on the solubility and the catalytic properties of the polymeric ligands. These polymeric catalysts could be easily recovered from the reaction solution by using solvent precipitation, and the reused catalyst showed no

loss of activity or enantioselectivity.

IT 850552-65-7P 850552-66-8P 850645-52-2P

850645-53-3P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

(preparation of dendronized poly(ruthenium-BINAP) complexes as highly effective and easily recyclable catalysts for asym. hydrogenation of aryl ketones and arylacrylic acids)

RN 850552-65-7 CAPLUS

CN Poly[iminocarbonyl[5-[[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]phenyl]methoxy]-1,3-phenylene]carbonylimino[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

RN 850552-66-8 CAPLUS
CN Poly[iminocarbonyl[5-[[3,5-bis[[3-[3,5-bis(phenylmethoxy)phenyl]methoxy]-5-(phenylmethoxy)phenyl]methoxy]phenyl]methoxy]-1,3-phenylene]carbonylimino[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

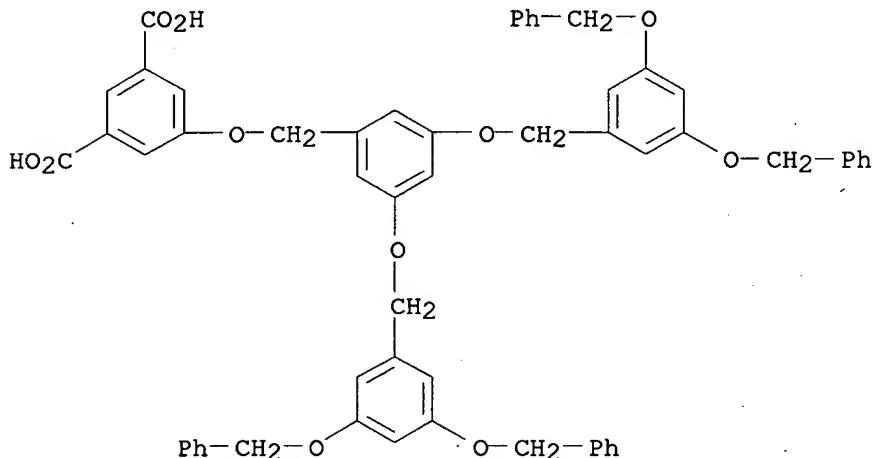
RN 850645-52-2 CAPLUS

CN 1,3-Benzenedicarboxylic acid, 5-[[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]phenyl]methoxy]-, polymer with (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI) (CA INDEX NAME)

CM 1

CRN 850552-64-6

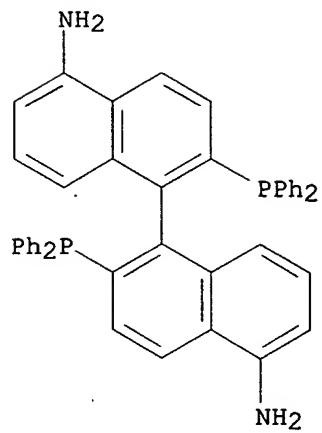
CMF C57 H48 O11



CM 2

CRN 244260-43-3

CMF C44 H34 N2 P2



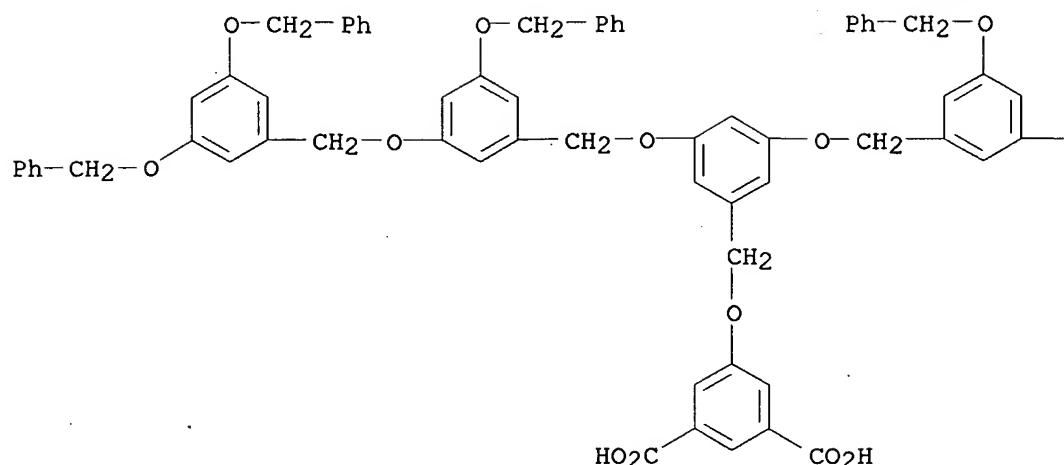
RN 850645-53-3 CAPLUS

CN 1,3-Benzenedicarboxylic acid, 5-[[3,5-bis[[3-[(3,5-bis(phenylmethoxy)phenyl)methoxy]-5-(phenylmethoxy)phenyl]methoxy]phenyl]methoxy]-, polymer with (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI) (CA INDEX NAME)

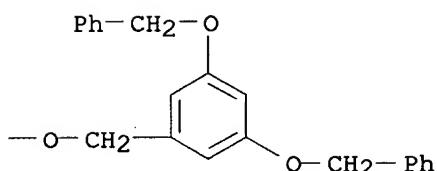
CM 1

CRN 850552-63-5
CMF C85 H72 O15

PAGE 1-A

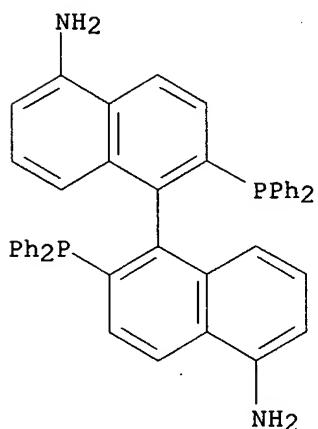


PAGE 1-B



CM 2

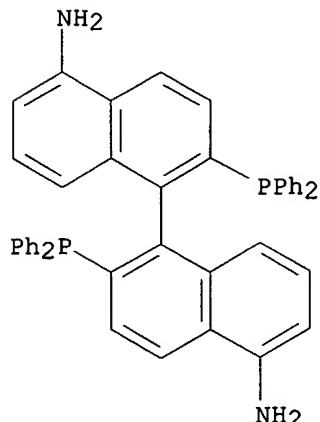
CRN 244260-43-3
CMF C44 H34 N2 P2



IT 244260-43-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of dendronized poly(ruthenium-BINAP) complexes as highly effective and easily recyclable catalysts for asym. hydrogenation of aryl ketones and arylacrylic acids)

RN 244260-43-3 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



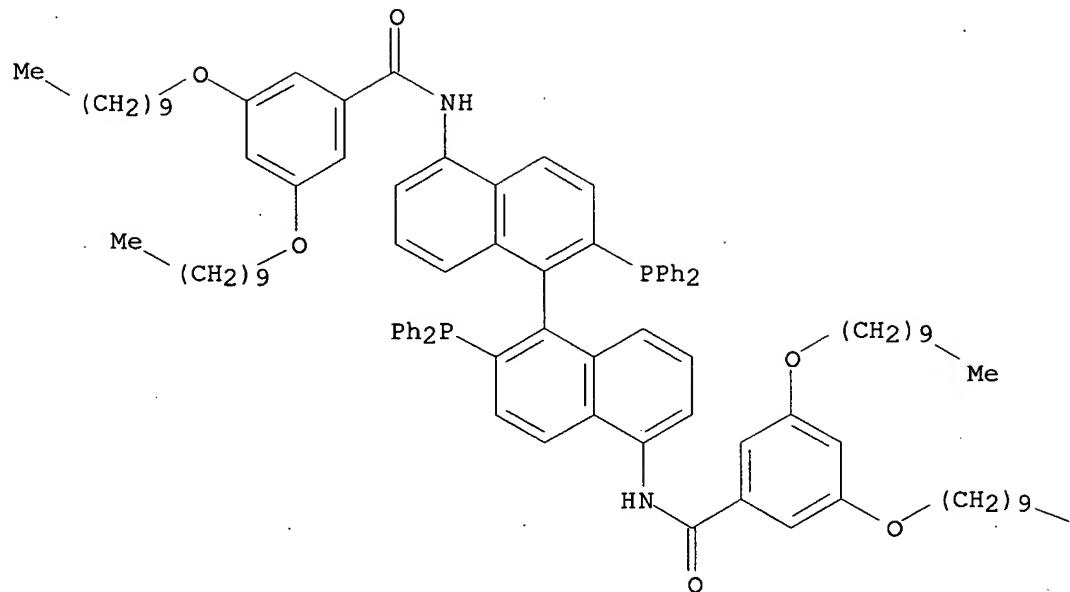
REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 11 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:884316 CAPLUS
DOCUMENT NUMBER: 143:153509
TITLE: Chiral phosphine ligand of dendritic molecule and its application
INVENTOR(S): Fan, Qinghua; Deng, Guojun; Chen, Xiaomin
PATENT ASSIGNEE(S): Institute of Chemistry, Chinese Academy of Sciences, Peop. Rep. China
SOURCE: Faming Zhanli Shenqing Gongkai Shuomingshu, 17 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| CN 1465608 | A | 20040107 | CN 2002-124391 | 20020621 |
| PRIORITY APPLN. INFO.: | | | CN 2002-124391 | 20020621 |

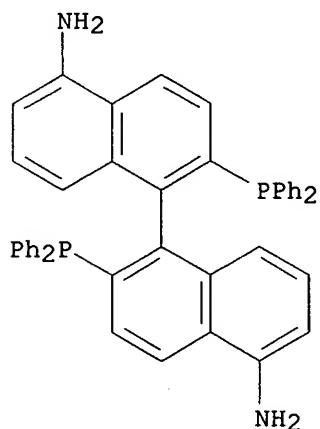
OTHER SOURCE(S): CASREACT 143:153509
AB The chiral phosphine ligand of dendritic mol. is prepared by condensation reaction of dendritic mol. synthon with chiral phosphine compound through the linkage of amide group, ester group, or ureido. There are reactive groups (such as carboxy, amino, hydroxy, or isocyanate ester) at the end and alkyl at outer layer of the dendritic mol. synthon. The chiral phosphine compound is 5,5'-diamino-2,2'-bis(diphenylphosphino)-1,1'-binaphthalene, 3,4'-bis(diphenylphosphino)pyrrolidine, 4-diphenylphosphino-2-diphenylphosphinomethylpyrrolidine. The chiral phosphine ligand may be used in asym. hydrogenation of alpha-unsatd. aromatic carboxylic acid and alpha-dehydroamino acid.

IT 483985-21-3P
RL: IMF (Industrial manufacture); PREP (Preparation).
(for synthesis of chiral phosphine ligand of dendritic mol.)
RN 483985-21-3 CAPLUS
CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(decyloxy)- (9CI) (CA INDEX NAME)

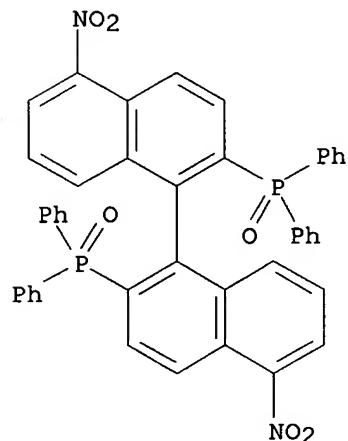


Me

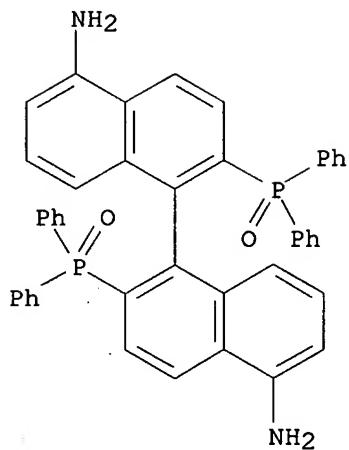
IT 244260-43-3P 845892-20-8P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
 (Reactant or reagent)
 (for synthesis of chiral phosphine ligand of dendritic mol.)
 RN 244260-43-3 CAPLUS
 CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
 (CA INDEX NAME)



RN 845892-20-8 CAPLUS
 CN Phosphine oxide, [(1R)-5,5'-dinitro[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



IT 114317-09-8
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (for synthesis of chiral phosphine ligand of dendritic mol.)
 RN 114317-09-8 CAPLUS
 CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphinyl)- (CA INDEX NAME)



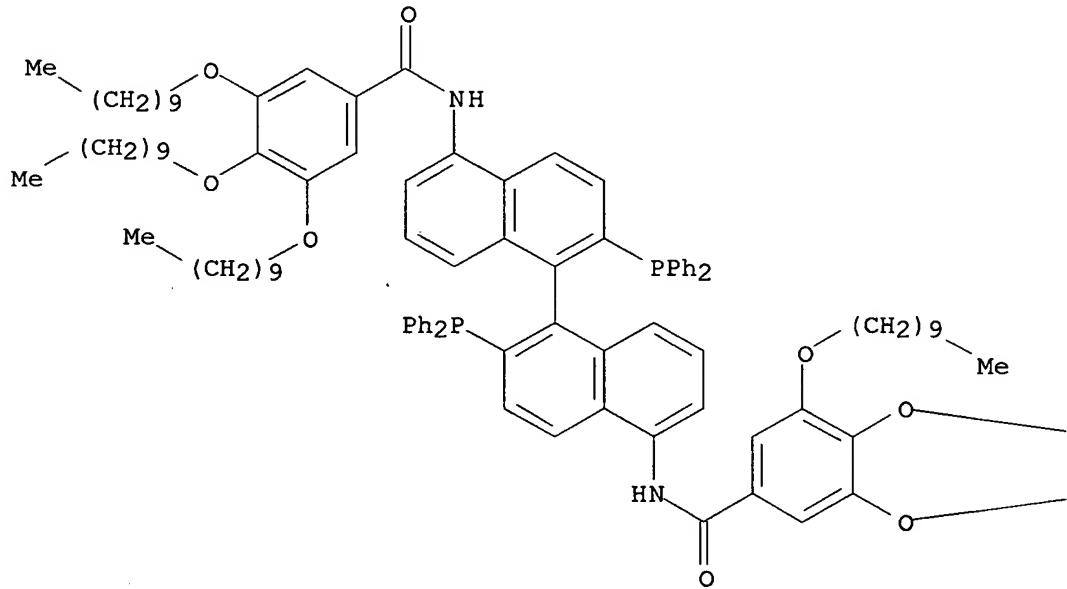
IT 471863-91-9P

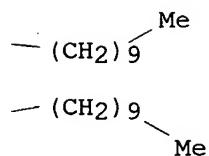
RL: IMF (Industrial manufacture); PREP (Preparation)
(synthesis of chiral phosphine ligand of dendritic mol.)

RN 471863-91-9 CAPLUS

CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,4,5-tris(decyloxy)-(9CI) (CA INDEX NAME)

PAGE 1-A



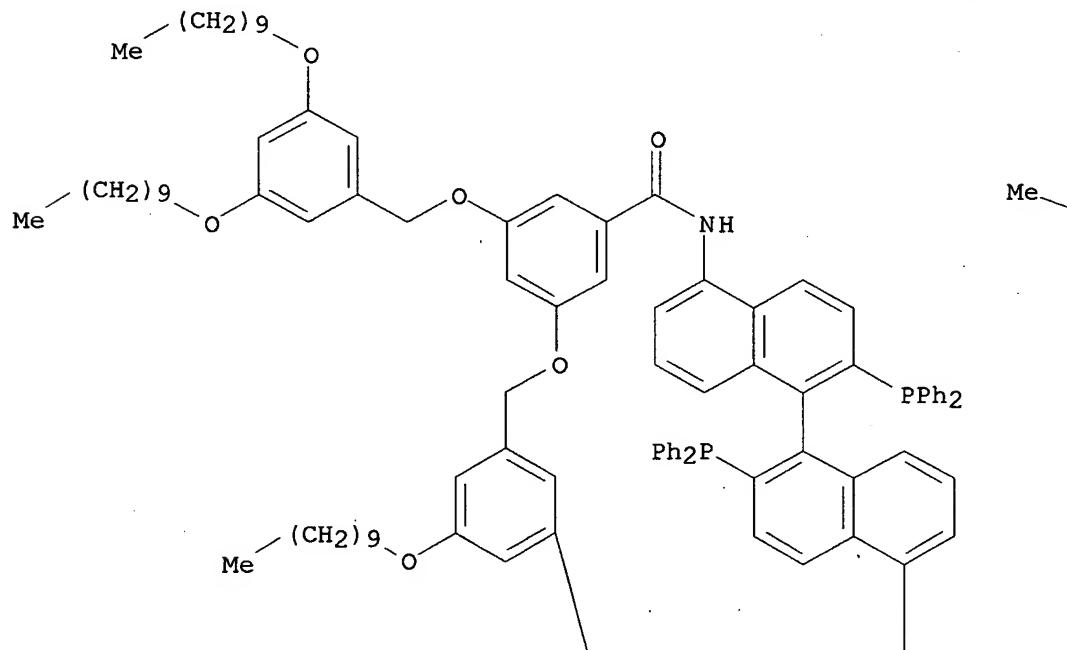


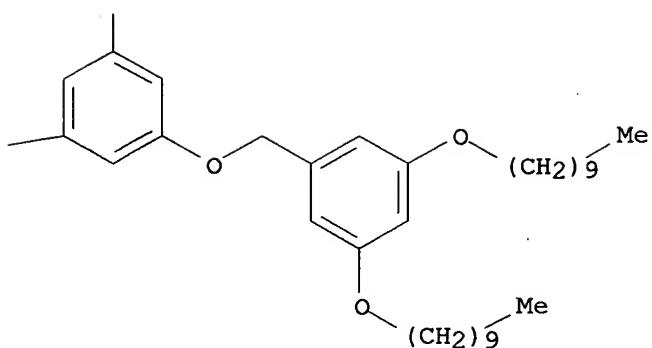
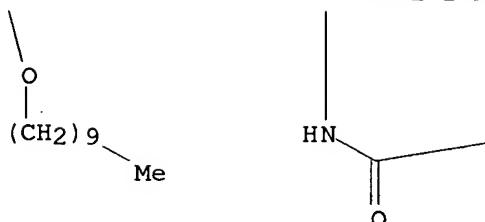
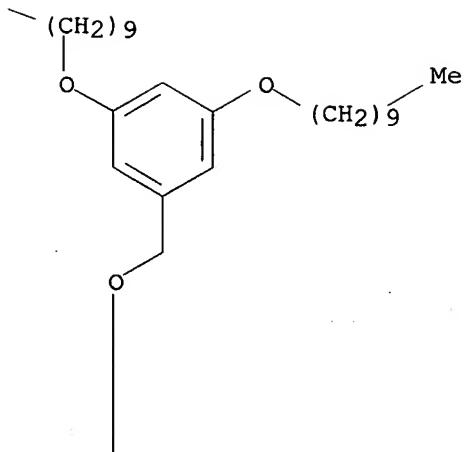
IT 483985-23-5P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
 (Reactant or reagent)
 (synthesis of chiral phosphine ligand of dendritic mol.)

RN 483985-23-5 CAPLUS

CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis([3,5-bis(decyloxy)phenyl]methoxy)- (9CI) (CA INDEX NAME)





L3 ANSWER 12 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:762978 CAPLUS
 DOCUMENT NUMBER: 142:261284
 TITLE: Improved synthesis of 5,5-diamino BINAP and application to asymmetric hydrogenation

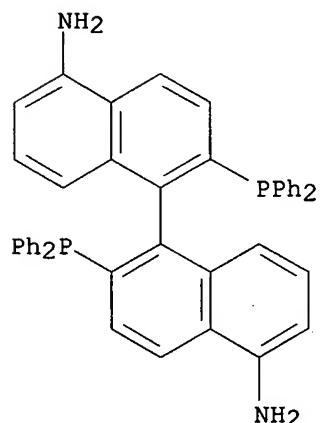
AUTHOR(S): Huang, Yi-Yong; Deng, Guo-Jun; Wang, Xia-Yu; He, Yan-Mei; Fan, Qing-Hua
CORPORATE SOURCE: College of Chemistry, Xiangtan University, Xiangtan, 411105, Peop. Rep. China
SOURCE: Chinese Journal of Chemistry (2004), 22(9), 891-893
CODEN: CJOCEV; ISSN: 1001-604X
PUBLISHER: Science Press
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 142:261284

AB 5,5-Diamino BINAP has been synthesized via three steps using BINAPO as starting material with high reaction yield. The present method needed only a stoichiometric quantity of nitric acid in the step of nitration of BINAPO, giving almost quant. reaction yield. Based on 5,5-diamino BINAP, three other new BINAP derivs. have been synthesized. These modified BINAP ligands showed better catalytic properties as compared to BINAP itself in the asym. hydrogenation of 2-(6-methoxy-2-naphthyl)acrylic acid.

IT 244260-43-3P 566932-78-3P 845891-02-3P
845891-04-5P
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(improved synthesis of 5,5-diamino BINAP and application to asym.
hydrogenation of 2-(6-methoxy-2-naphthyl)acrylic acid)

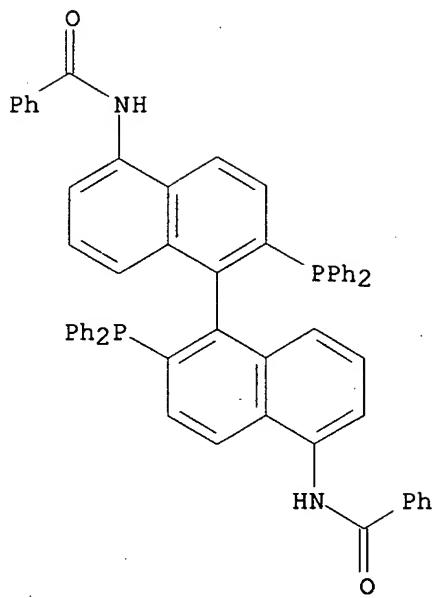
RN 244260-43-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



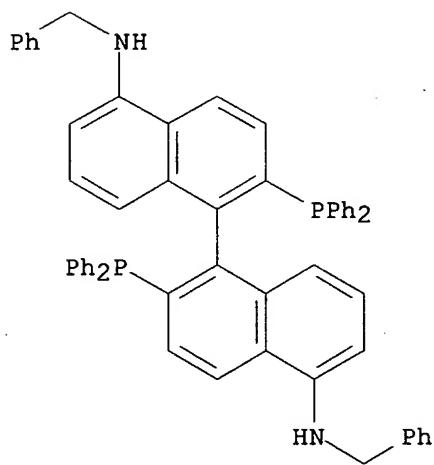
RN 566932-78-3 CAPLUS

CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis- (9CI) (CA INDEX NAME)



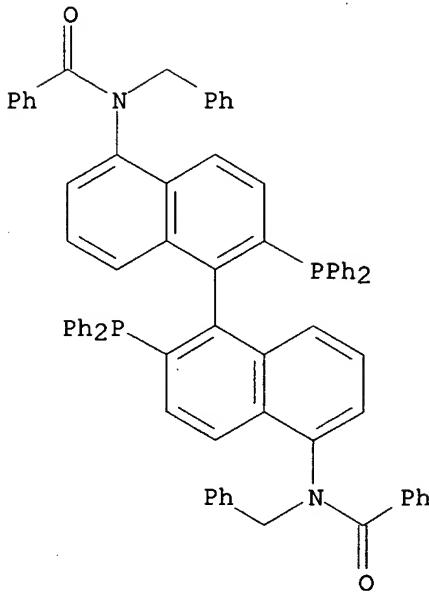
RN 845891-02-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-N,N'-bis(phenylmethyl)-, (1R)- (9CI) (CA INDEX NAME)



RN 845891-04-5 CAPLUS

CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[N-(phenylmethyl)-] (9CI) (CA INDEX NAME)



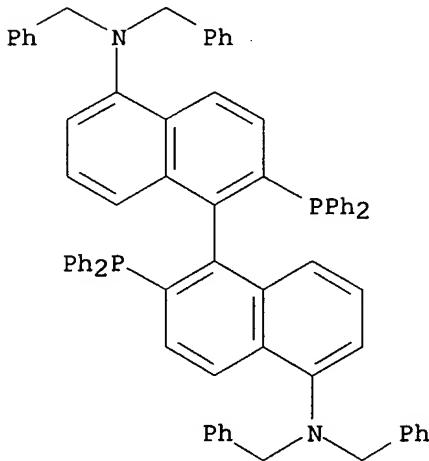
IT 845891-07-8P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

(improved synthesis of 5,5-diamino BINAP and application to asym.
hydrogenation of 2-(6-methoxy-2-naphthyl)acrylic acid)

RN 845891-07-8 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-N,N,N',N'-tetrakis(phenylmethyl)-, (1R)- (9CI) (CA INDEX NAME)



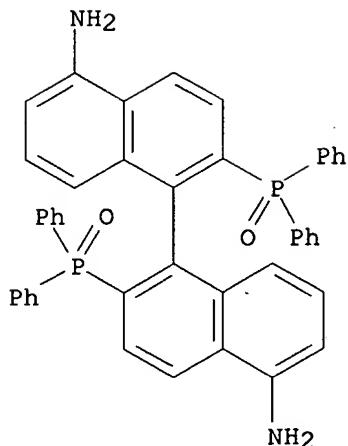
IT 114317-09-8P 845892-20-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)

(improved synthesis of 5,5-diamino BINAP and application to asym.
hydrogenation of 2-(6-methoxy-2-naphthyl)acrylic acid)

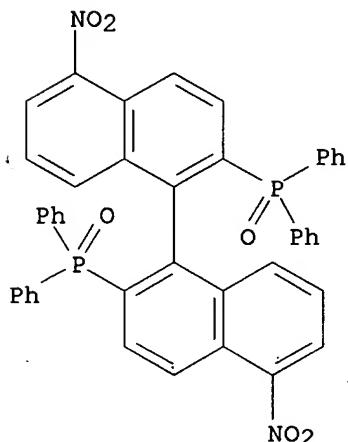
RN 114317-09-8 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphinyl)- (CA
INDEX NAME)



RN 845892-20-8 CAPLUS

CN Phosphine oxide, [(1R)-5,5'-dinitro[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)]



REFERENCE COUNT:

9

THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 13 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:733165 CAPLUS

DOCUMENT NUMBER: 141:401500

TITLE: Supramolecular assembly of a series of chiral dendrimers in interfacial films

AUTHOR(S): Yuan, Jing; Deng, Guojun; Fan, Qinghua; Liu, Minghua

CORPORATE SOURCE: CAS Key Laboratory of Colloid and Interface Science, Center for Molecular Science, Institute of Chemistry, The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Thin Solid Films (2004), 466(1-2), 295-302

CODEN: THSFAP; ISSN: 0040-6090

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Supramol. assembly and interfacial properties of a series of novel binaphthyl containing dendrimers from generation 1 through generation 4 have been investigated at the air/water interface and in solid substrates. Due

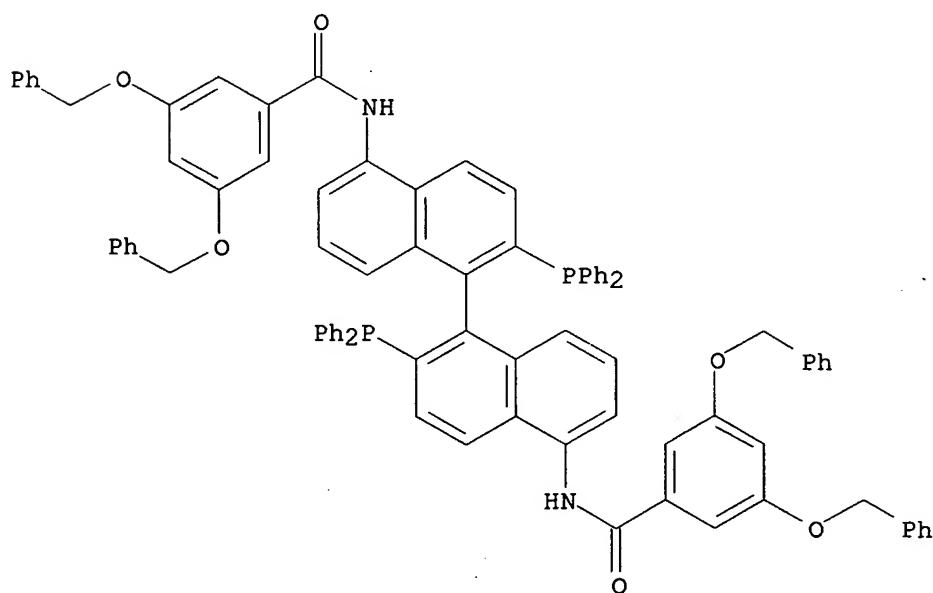
to the lack of either long alkyl chains or strong hydrophilic groups, the dendrimer mols. tend to aggregate together to form stable two-dimensional ultrathin films, as verified by π -A and A-t measurements. Atomic force microscope (AFM) measurements of the transferred one-layer ultrathin films indicate that all the dendrimers show disk-like morphologies, which could be varied in particle size upon changing the surface pressure. The height profiles reveal that the height of the disks is between that of a monolayer and a bilayer, indicating that they are formed due to the aggregation of dendrimers with a distortion and/or partial overlapping. CD (CD) spectra of the transferred multilayer films show Cotton effects due to the exciton couplet of the aromatic moieties adjacent to the bis(diphenylphosphino)-binaphthyl moiety, which is an active catalytic site for the dendrimer. With the increment of the generation, the intensity of the Cotton effects increased, suggesting that the optical active site of the dendrimer can be controlled by the outside wedge.

IT 286015-10-9 286015-11-0

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
 (supramolecular self-assembly chiral dendrimer and its surface structure)

RN 286015-10-9 CAPLUS

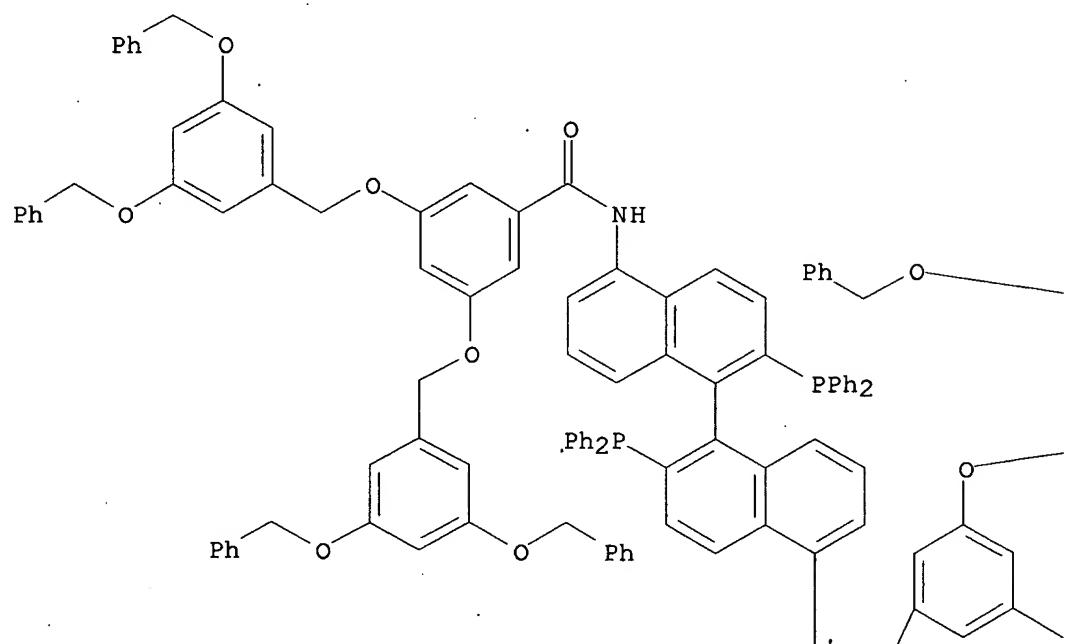
CN Benzamide, N,N'-(*(1R)*-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)- (9CI) (CA INDEX NAME)



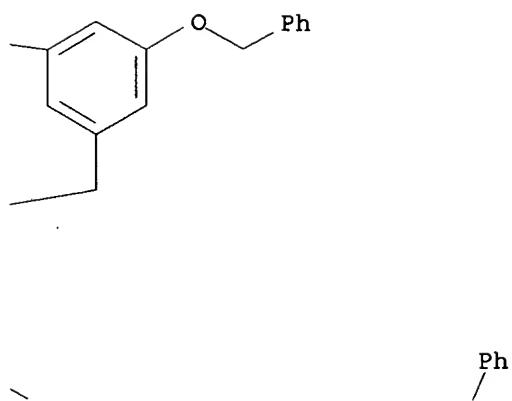
RN 286015-11-0 CAPLUS

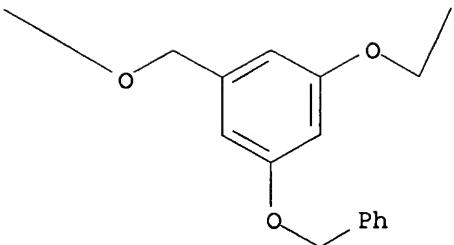
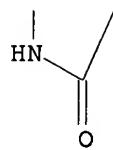
CN Benzamide, N,N'-(*(1R)*-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B





REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 14 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:626140 CAPLUS

DOCUMENT NUMBER: 141:296154

TITLE: Enantioselective catalytic asymmetric hydrogenation of ethyl acetoacetate in room temperature ionic liquids

AUTHOR(S): Berthod, Mikael; Joerger, Jean-Michel; Mignani, Gerard; Vaultier, Michel; Lemaire, Marc

CORPORATE SOURCE: UMR 5181, UCBL, CPE, Laboratoire de Catalyse et Synthese Organique, Villeurbanne, 69622, Fr.

SOURCE: Tetrahedron: Asymmetry (2004), 15(14), 2219-2221
CODEN: TASYE3; ISSN: 0957-4166

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:296154

AB Ruthenium complexes of bis-ammonio-substituted BINAP ligands catalyze asym. hydrogenation of Et acetoacetate in imidazolium, pyridinium and phosphonium room-temperature ionic liqs. 4,4'-Bis(aminomethyl)-BINAP and 5,5'-bis(aminomethyl)-BINAP were protonated to give corresponding hydrobromides and complexed in situ with [Ru(*n*3-2-methylallyl)2(COD)] to give ruthenium dibromo complexes (9, 10), active in asym. hydrogenation of Et acetoacetate in 1-butyl-3-methylimidazolium hexafluorophosphate (1), N,N-bis(trifluoromethanesulfonyl)imide (2), tetrafluoroborate (3), 1-butylpyridinium N,N-bis(trifluoromethanesulfonyl)imide (4), tricyclohexyl(tetradecyl)phosphonium chloride (5) and N,N-bis(trifluoromethanesulfonyl)imide (6) ionic liqs. at room temperature

Complete

conversion and good selectivity were obtained. Recycling by simple extraction with pentane was also possible.

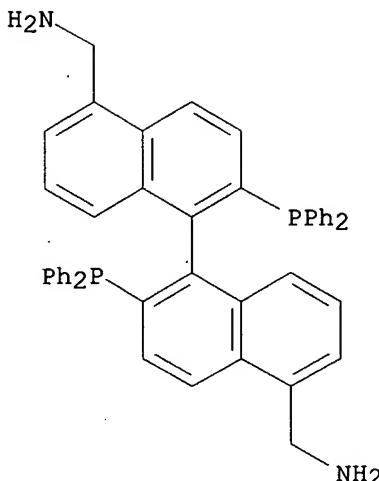
IT 681244-51-9

RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(protonation, complexation; asym. hydrogenation of Et acetoacetate in ionic liqs. at room temperature in presence of ruthenium modified ammoniomethyl BINAP catalyst)

RN 681244-51-9 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-,



REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 15 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:546440 CAPLUS

DOCUMENT NUMBER: 141:107944

TITLE: Diphosphines, preparation and uses thereof for manufacture of ligands for metal complex catalysts

INVENTOR(S): Lemaire, Marc; Saluzzo, Christine; Berthod, Mikael

PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Centre National de la Recherche Scientifique

SOURCE: PCT Int. Appl., 78 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| WO 2004056483 | A1 | 20040708 | WO 2003-FR3782 | 20031217 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO,
NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| FR 2849036 | A1 | 20040625 | FR 2002-16086 | 20021218 |
| FR 2849036 | B1 | 20050520 | | |
| FR 2853653 | A1 | 20041015 | FR 2003-4392 | 20030409 |
| FR 2853653 | B1 | 20071116 | | |
| FR 2854405 | A1 | 20041105 | FR 2003-5255 | 20030429 |
| FR 2854405 | B1 | 20080229 | | |
| CA 2509911 | A1 | 20040708 | CA 2003-2509911 | 20031217 |
| AU 2003299336 | A1 | 20040714 | AU 2003-299336 | 20031217 |
| EP 1633477 | A1 | 20060315 | EP 2003-799617 | 20031217 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, | | | | |

| | | | | |
|--|----|----------------|----------------|----------|
| IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK | | | | |
| IN 2005CN01258 | A | 20070622 | IN 2005-CN1258 | 20050615 |
| US 20070010695 | A1 | 20070111 | US 2006-539640 | 20060921 |
| IN 2007CN01851 | A | 20071116 | IN 2007-CN1851 | 20070501 |
| IN 2007CN01852 | A | 20071116 | IN 2007-CN1852 | 20070501 |
| PRIORITY APPLN. INFO.: | | FR 2002-16086 | A | 20021218 |
| | | FR 2003-4392 | A | 20030409 |
| | | FR 2003-5255 | A | 20030429 |
| | | WO 2003-FR3782 | W | 20031217 |
| | | IN 2005-CN1258 | A3 | 20050615 |

OTHER SOURCE(S): CASREACT 141:107944; MARPAT 141:107944

AB Binaphthyl-2,2'-diphosphines having groups in the 5 and 5' positions are manufactured and exhibit complexing ability with Rh, Ru, Re, Ir, Co, Ni, Pt, or Pd to form catalysts for reactions such as asym. hydrogenation. A typical asym. hydrogenation catalyst was manufactured by oxidation of (S)-BINAP, bromination of the resulting diphosphine oxide, reaction of the resulting diphosphine oxide 5,5'-dibromide with Cu(CN)2, reduction of the resulting diphosphine oxide 5,5'-dicyanide with PhSiH3, reduction of the resulting diphosphine 5,5'-dicyanide with LiAlH4, polymerization of the resulting (S)-5,5'-bis(aminomethyl)BINAP with tolylene 2,6-diisocyanate, and complexing the resulting polyurea with Ru.

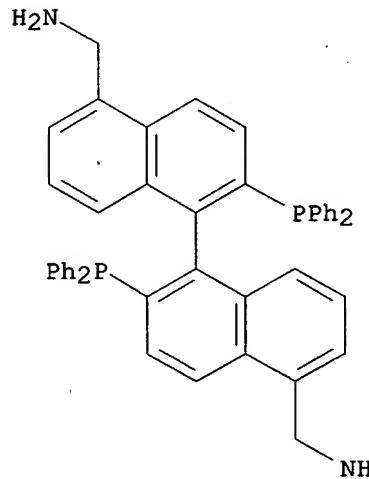
IT 681244-51-9P 701935-24-2P 701935-25-3P
709640-82-4P 717137-70-7P 717908-79-7P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
USES (Uses)

(5,5'-disubstituted binaphthyldiphosphines for manufacture of monomeric and polymeric ligands for metal complex catalysts for asym. reactions)

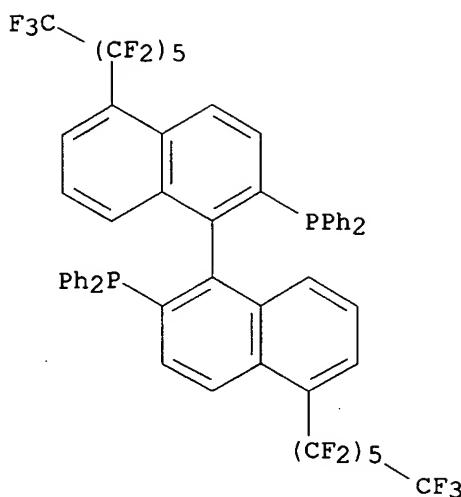
RN 681244-51-9 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1R)- (9CI) (CA INDEX NAME)



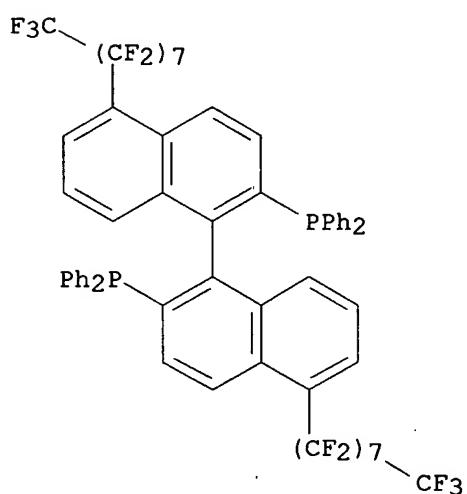
RN 701935-24-2 CAPLUS

CN Phosphine, [(1R)-5,5'-bis(tridecafluorohexyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)]



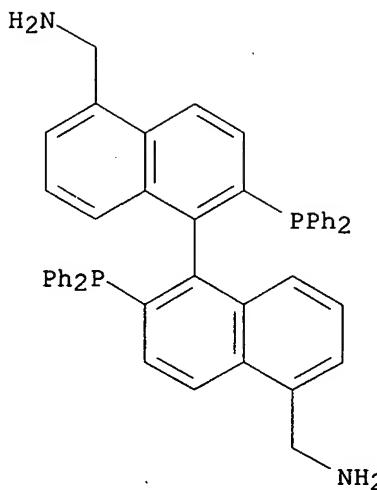
RN 701935-25-3 CAPLUS

CN Phosphine, [(1R)-5,5'-bis(heptadecafluoroctyl)][1,1'-binaphthalene]-2,2'-diyl]bis[diphenylphosphino] (9CI) (CA INDEX NAME)



RN 709640-82-4 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-(1S)- (9CI) (CA INDEX NAME)



RN 717137-70-7 CAPLUS

CN Poly[iminocarbonylimino(2-methyl-1,3-phenylene)iminocarbonyliminomethylene [(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]methylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

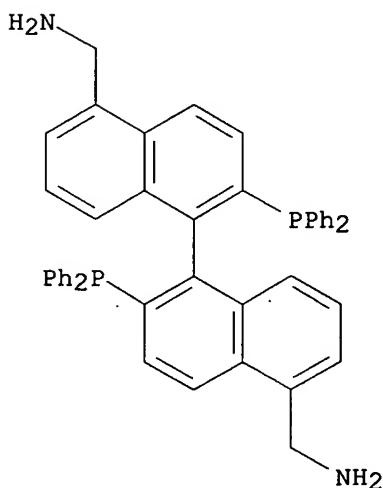
RN 717908-79-7 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1S)-, polymer with 1,3-diisocyanato-2-methylbenzene (9CI) (CA INDEX NAME)

CM 1

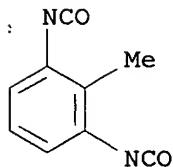
CRN 709640-82-4

CMF C46 H38 N2 P2



CM 2

CRN 91-08-7
CMF C9 H6 N2 O2

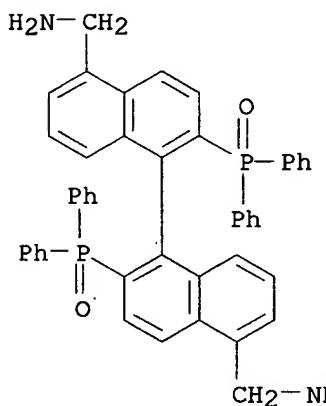


IT 717137-73-0P

RL: IMF (Industrial manufacture); PREP (Preparation)
(intermediate; 5,5'-disubstituted binaphthylidiphosphines for manufacture of monomeric and polymeric ligands for metal complex catalysts for asym. reactions)

RN 717137-73-0 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphinyl)-
(CA INDEX NAME)



IT 681244-41-7P 681244-45-1P 701935-19-5P

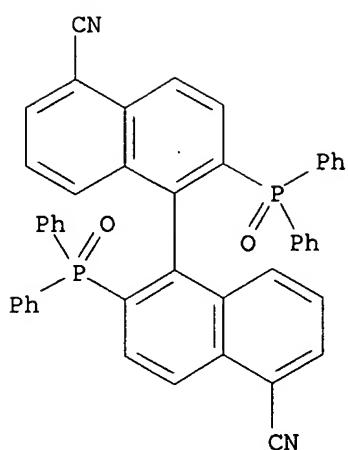
709640-80-2P 709640-81-3P 717908-78-6P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; 5,5'-disubstituted binaphthylidiphosphines for manufacture of monomeric and polymeric ligands for metal complex catalysts for asym. reactions)

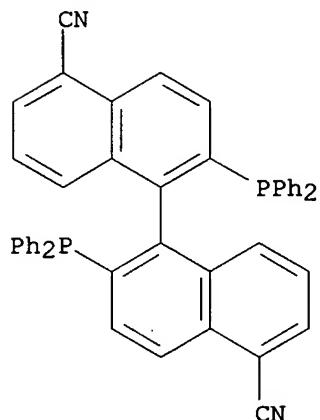
RN 681244-41-7 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-, (1R)- (9CI) (CA INDEX NAME)



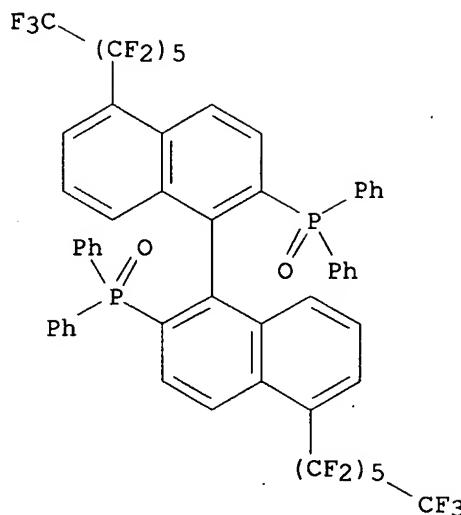
RN 681244-45-1 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,
(1R)- (9CI) (CA INDEX NAME)



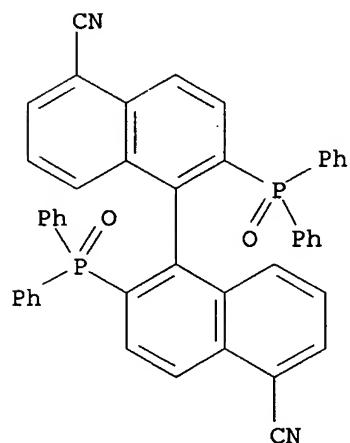
RN 701935-19-5 CAPLUS

CN Phosphine oxide, [(1R)-5,5'-bis(tridecafluorohexyl)[1,1'-binaphthalene]-
2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



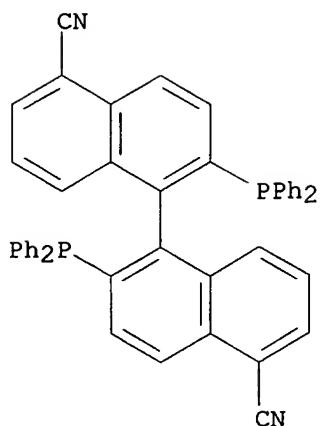
RN 709640-80-2 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-,
(1S)- (9CI) (CA INDEX NAME)



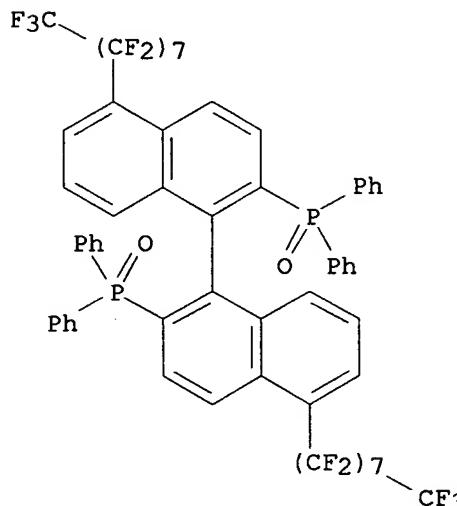
RN 709640-81-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,
(1S)- (9CI) (CA INDEX NAME)



RN 717908-78-6 CAPLUS

CN Phosphine oxide, [(1S)-5,5'-bis(heptadecafluoroctyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT:

8

THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 16 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:515337 CAPLUS

DOCUMENT NUMBER: 141:71716

TITLE: Chiral 5,5'-disubstituted binaphthyl diphosphines, processes for their preparation, and their uses as ligands in asymmetric hydrogenation catalysts

INVENTOR(S): Lemaire, Marc; Saluzzo, Christine; Berthod, Mikael
PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Centre National De La Recherche Scientifique Cnrs

SOURCE: Fr. Demande, 45 pp.
CODEN: FRXXBL

DOCUMENT TYPE: Patent
LANGUAGE: French

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.

KIND DATE

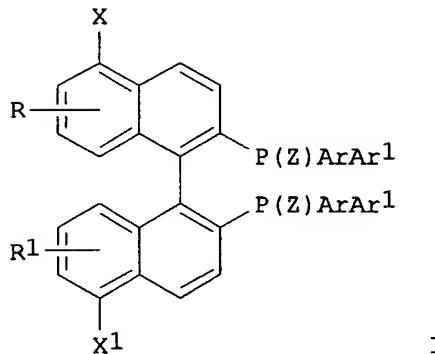
APPLICATION NO.

DATE

| | | | | |
|------------------------|--|----------|------------------|-------------|
| FR 2849036 | A1 | 20040625 | FR 2002-16086 | 20021218 |
| FR 2849036 | B1 | 20050520 | | |
| CA 2509911 | A1 | 20040708 | CA 2003-2509911 | 20031217 |
| WO 2004056483 | A1 | 20040708 | WO 2003-FR3782 | 20031217 |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | |
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| AU 2003299336 | A1 | 20040714 | AU 2003-299336 | 20031217 |
| CN 1738679 | A | 20060222 | CN 2003-80109027 | 20031217 |
| EP 1633477 | A1 | 20060315 | EP 2003-799617 | 20031217 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK | | | |
| IN 2005CN01258 | A | 20070622 | IN 2005-CN1258 | 20050615 |
| US 20070010695 | A1 | 20070111 | US 2006-539640 | 20060921 |
| IN 2007CN01851 | A | 20071116 | IN 2007-CN1851 | 20070501 |
| IN 2007CN01852 | A | 20071116 | IN 2007-CN1852 | 20070501 |
| PRIORITY APPLN. INFO.: | | | FR 2002-16086 | A 20021218 |
| | | | FR 2003-4392 | A 20030409 |
| | | | FR 2003-5255 | A 20030429 |
| | | | WO 2003-FR3782 | W 20031217 |
| | | | IN 2005-CN1258 | A3 20050615 |

OTHER SOURCE(S): CASREACT 141:71716; MARPAT 141:71716

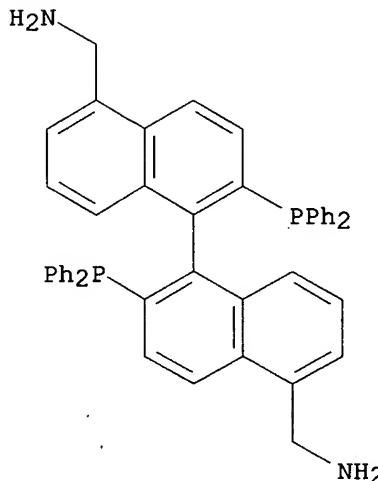
GI



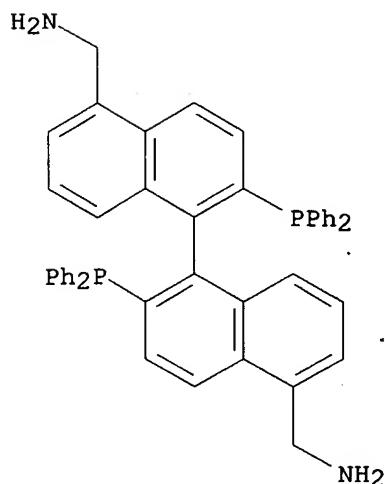
AB Racemic and optically active diphosphines I [Z = lone pair; R, R¹ = H, C1-6 alkyl, C1-6 alkoxy; Ar, Ar¹ = alkyl, alkenyl, cycloalkyl, aryl, aralkyl, preferably Ph; X, X¹ = (un)substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl, aralkyl, Br, Cl, iodo, OH, CN, CH₂NH₂, CO₂H or esters, CH₂OH, NHNH₂, N₃, Mg, Li, etc.] and bis(phosphine oxide)s I [Z = O; same R, R¹, Ar, Ar¹; X, X¹ = Cl, Br, iodo] useful, in their optically active form, as ligands for ruthenium, rhodium or iridium catalysts in asym. organic synthesis and in particular for enantioselective hydrogenation of C:C or C:O double bonds, are claimed, as are processes for preparation of I. In an example, treating 0.0235 mmol (S)- or (R)-I (Z = lone pair; R = R¹ = H; Ar = Ar¹ = Ph; X = X¹ = CH₂NH₂; preparation given) in 1 mL CH₂Cl₂ with 0.0235 mmol bis(2-methylallyl)(1,5-cyclooctadiene)ruthenium for 30 min, followed by evaporation of solvent and addition of MeOH or EtOH solvent and Me or Et acetoacetate substrate with a substrate-to-catalyst ratio of 1000:1 and hydrogenation at 40 bar H₂ at 50° for 15 h gave 100% conversions to

the corresponding alc. with >99% ee, where the configuration of the alc. product depended on the chirality of I used.

IT 681244-51-9P 709640-82-4P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)
(preparation of chiral binaphthyl diphosphines, and their uses as ligands in
asym. hydrogenation catalysts)
RN 681244-51-9 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-,
(1R)- (9CI) (CA INDEX NAME)

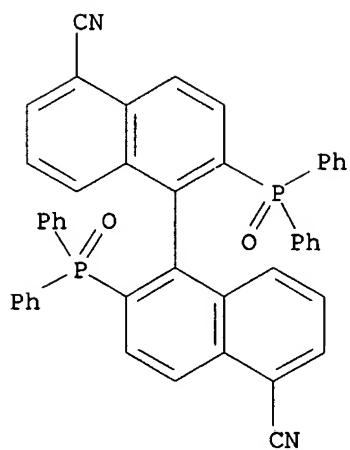


RN 709640-82-4 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-,
(1S)- (9CI) (CA INDEX NAME)



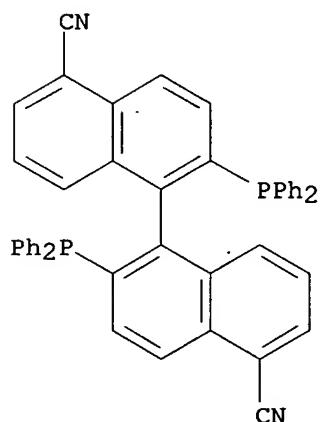
IT 681244-41-7P 681244-45-1P 709640-80-2P
709640-81-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation of chiral binaphthyl diphosphines, and their uses as ligands in
asym. hydrogenation catalysts)
RN 681244-41-7 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-,

(1R)- (9CI) (CA INDEX NAME)



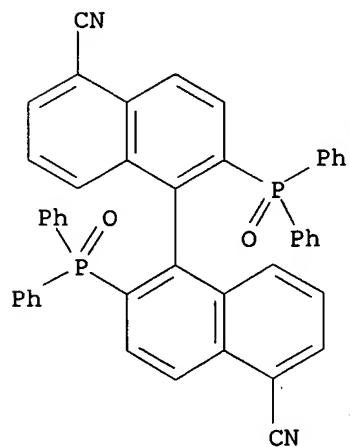
RN 681244-45-1 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,
(1R)- (9CI) (CA INDEX NAME)

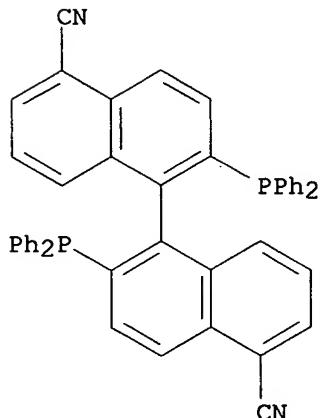


RN 709640-80-2 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-,
(1S)- (9CI) (CA INDEX NAME)



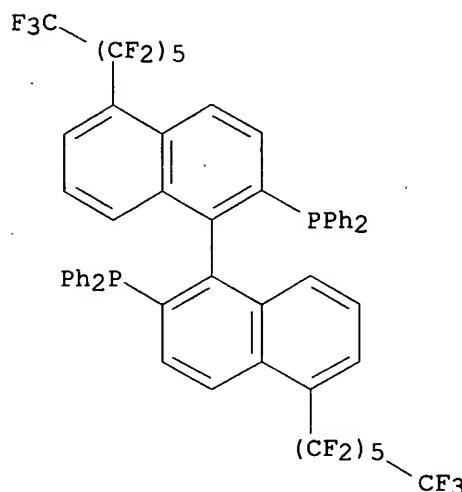
RN 709640-81-3 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,
(1S)- (9CI) (CA INDEX NAME)



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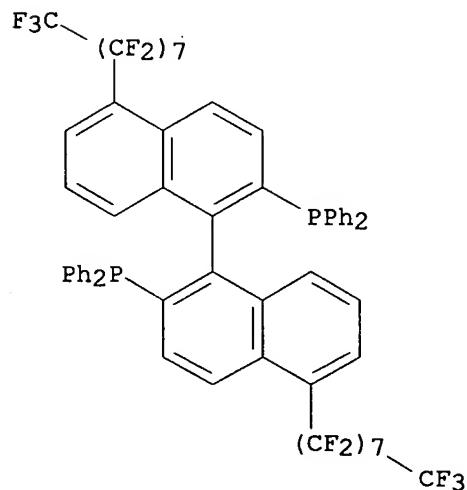
L3 ANSWER 17 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:270947 CAPLUS
DOCUMENT NUMBER: 141:38419
TITLE: New perfluoroalkylated BINAP usable as a ligand in homogeneous and supercritical carbon dioxide asymmetric hydrogenation
AUTHOR(S): Berthod, Mikael; Mignani, Gerard; Lemaire, Marc
CORPORATE SOURCE: Laboratoire de Catalyse et de Synthese Organique, UCBL, UMR 5181, Villeurbanne, Fr.
SOURCE: Tetrahedron: Asymmetry (2004), 15(7), 1121-1126
CODEN: TASYE3; ISSN: 0957-4166
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 141:38419
AB New perfluoroalkylated BINAP ligands were synthesized in four steps from enantiomerically pure BINAP. For example, (+)-(1R)-[5,5'-bis(perfluorohexyl)-1,1'-binaphthalene]-2,2'-diylbis[diphenylphosphine] (I) was prepared starting from (1R)-[1,1'-binaphthalene]-2,2'-diylbis[diphenylphosphine] by bromination and subsequent fluoroalkylation. The [(1,2,5,6- η)-1,5-cyclooctadiene]bis[(1,2,3- η)-2-methyl-2-propenyl]ruthenium-catalyzed hydrogenation of (2Z)-2-(acetylamino)-2-butenoic acid Me ester in the presence of I as chiral ligand using supercrit. carbon dioxide as solvent and trifluorotoluene as co-solvent gave 2-(acetylamino)butanoic acid Me ester in 74% enantiomeric excess. The new ligands were used in the homogeneous asym. hydrogenation of Et acetoacetate in ethanol and in the asym. hydrogenation of Me 2-acetamidoacrylate in supercrit. carbon dioxide. In supercrit. media, the addition and nature of a co-solvent have been discussed. Very good conversion and selectivity were obtained in each case.
IT 701935-24-2P 701935-25-3P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of chiral [bis(perfluorohexyl)binaphthalene]diylbis[diphenylphosphine] as ligands for ruthenium-catalyzed stereoselective hydrogenation)
RN 701935-24-2 CAPLUS

CN Phosphine, [(1R)-5,5'-bis(tridecafluorohexyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 701935-25-3 CAPLUS

CN Phosphine, [(1R)-5,5'-bis(heptadecafluoroctyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)

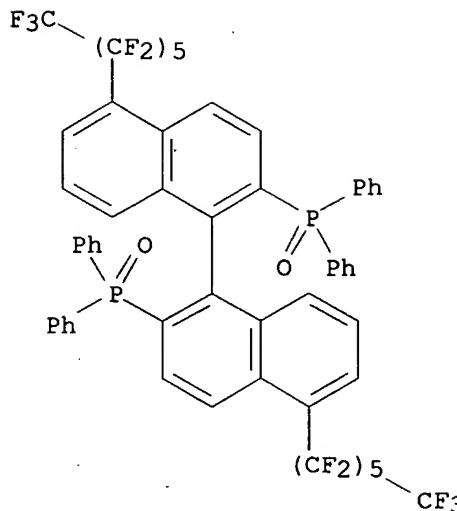


IT 701935-19-5P 701935-21-9P

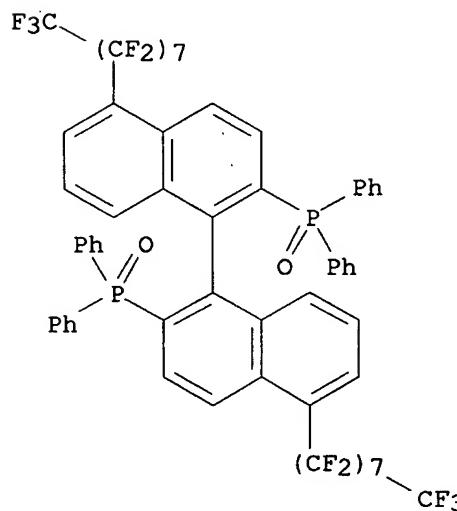
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of chiral [bis(perfluorohexyl)binaphthalene]diylbis[diphenylphosphine] as ligands for ruthenium-catalyzed stereoselective hydrogenation)

RN 701935-19-5 CAPLUS

CN Phosphine oxide, [(1R)-5,5'-bis(tridecafluorohexyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 701935-21-9 CAPLUS
 CN Phosphine oxide, [(1R)-5,5'-bis(heptadecafluoroctyl)[1,1'-binaphthalene]-
 2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)

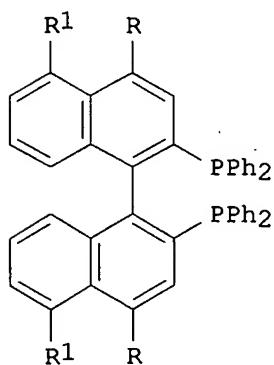


REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

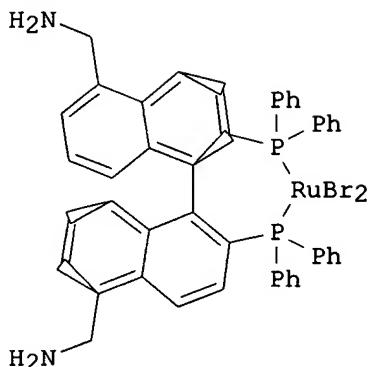
L3 ANSWER 18 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:106245 CAPLUS
 DOCUMENT NUMBER: 140:357425
 TITLE: 4,4' and 5,5'-DiamBINAP as a hydrosoluble chiral
 ligand: syntheses and use in Ru(II) asymmetric
 biphasic catalytic hydrogenation
 AUTHOR(S): Berthod, Mikael; Saluzzo, Christine; Mignani, Gerard;
 Lemaire, Marc
 CORPORATE SOURCE: Laboratoire de Catalyse et de Synthese Organique,
 UCBL, UMR 5181, Villeurbanne, 69622, Fr.
 SOURCE: Tetrahedron: Asymmetry (2004), 15(4), 639-645
 CODEN: TASYE3; ISSN: 0957-4166
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal

LANGUAGE:
OTHER SOURCE(S):
GI

English
CASREACT 140:357425



I



II

AB 4,4' And 5,5'-di(aminomethyl)BINAP (S)-I ($R = H_2NCH_2$; $R1 = H$) and (R)-I ($R = H$; $R1 = H_2NCH_2$) are prepared in five steps from enantiomerically pure BINAP; derived ruthenium (II) catalysts such as $II \bullet 2HBr$ are found to be water-soluble and enantioselective catalysts for the hydrogenation of β -keto esters in biphasic water-substrate solns. to give nonracemic β -hydroxy esters in 100% conversion and 96-99% ee. Oxidation of BINAP enantiomers with hydrogen peroxide yields the bis(phosphine oxide) of BINAP. Regioselective bromination of BINAP P,P'-dioxide with bromine and pyridine in methylene chloride yields the 4,4'-dibromide in 76% yield; bromination of BINAP P,P'-dioxide with bromine and iron in 1,2-dichloroethane at 80° yields the 5,5'-dibromide in 81% yield. Coupling of the dibromides with copper (I) cyanide in DMF yields the dinitriles; using the reagent combination of phenylsilane and trichlorosilane, the phosphine oxides are reduced to the phosphines in quant. yield. Reduction of the nitriles with lithium aluminum hydride yields the products I. Treatment of I with aqueous hydrobromic acid followed by addition of the ruthenium complex $Ru(\mu_4-1,5-COD)(\mu_3-CH_2CMe:CH_2)_2$ and hydrobromic acid in acetone yields water-soluble ruthenium catalysts such as II in quant. yield. Hydrogenation of Me and Et acetoacetate and Me benzoylacetate with catalysts such as II in methanol, ethanol, or water (in which the substrate forms a second phase) at 40 bar hydrogen pressure and 50° for 15 h yields the corresponding β -hydroxy esters in 100% conversion and 96-99% ee.

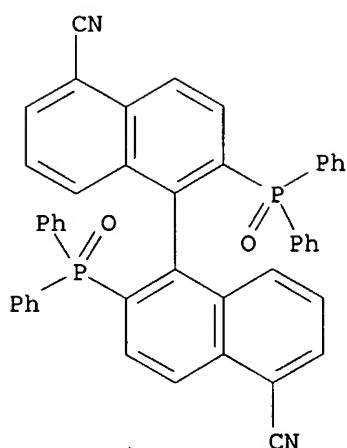
IT 681244-41-7P 681244-45-1P 681244-51-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

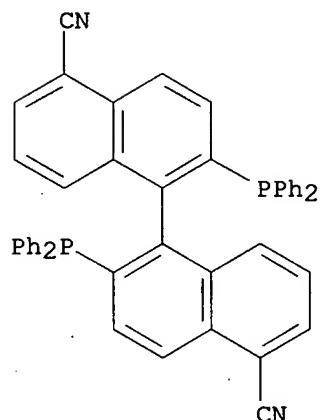
(preparation of nonracemic di(aminomethyl)BINAP ligands using regioselective bromination and chemoselective phosphine oxide reduction as key steps and the use of the ligands in enantioselective hydrogenation of β -keto esters)

RN 681244-41-7 CAPLUS

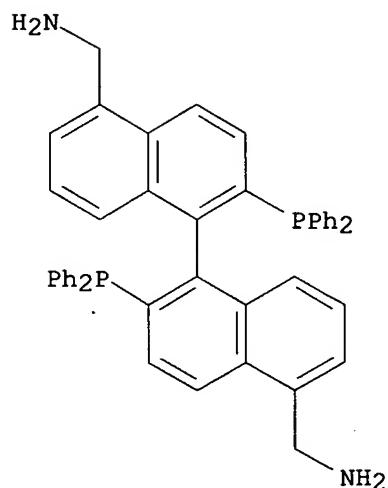
CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-, (1R)- (9CI) (CA INDEX NAME)



RN 681244-45-1 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,
(1R)- (9CI) (CA INDEX NAME)



RN 681244-51-9 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-,
(1R)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 19 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:148623 CAPLUS
DOCUMENT NUMBER: 139:133296
TITLE: Dendritic BINAP based system for asymmetric hydrogenation of simple aryl ketones
AUTHOR(S): Deng, Guo-Jun; Fan, Qing-Hua; Chen, Xiao-Min; Liu, Guo-Hua
CORPORATE SOURCE: Institute of Chemistry, Center for Molecular Science, The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Journal of Molecular Catalysis A: Chemical (2003), 193(1-2), 21-25
CODEN: JMCCF2; ISSN: 1381-1169

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 139:133296

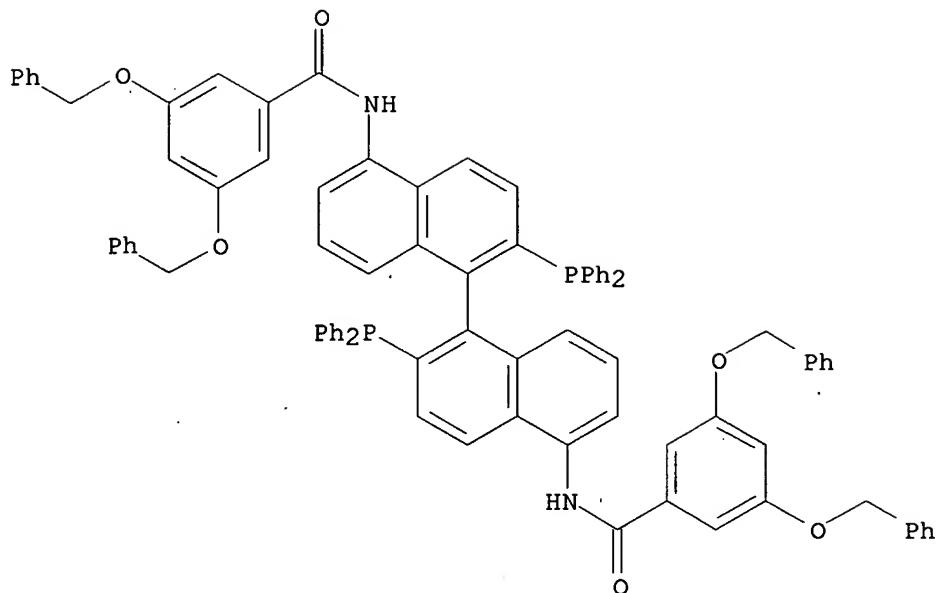
AB Highly effective and recyclable dendritic BINAP-Ru catalysts have been developed for asym. hydrogenation of simple aryl ketones. Dendritic ligands included N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)benzamide], N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]benzamide], and N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]phenyl]methoxy]benzamide]. Catalyst systems also included N,N'-(1R)-2,2'-Bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[benzamide]/(1R,1R)-1,2-diphenyl-1,2-ethanediamine and (R)-BINAP/(1R,1R)-1,2-diphenyl-1,2-ethanediamine and (R)-BINAP/(1S,1R)-1,2-diphenyl-1,2-ethanediamine. A series of dendritic BINAP-Ru/chiral diamine catalysts were developed for asym. hydrogenation of various simple aryl ketones. The resulting catalytic system showed very attractive due to very good catalytic activity and enantioselectivity as well as facile catalyst recycling. In the case of 1-acetonaphthone and 2-methylacetophenone, interesting e.e. value up to 95% was observed which are comparable to the enantioselectivity reported by Noyori under similar conditions and higher than that of the heterogeneous poly(BINAP)-Ru catalyst reported by Pu and co-workers [Tetrahedron Lett. 41 (2000) 1681].

IT 286015-10-9, N,N'-(1R)-2,2'-Bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)benzamide]
286015-11-0, N,N'-(1R)-2,2'-Bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]benzamide] 566932-78-3, N,N'-(1R)-2,2'-Bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[benzamide]

RL: CAT (Catalyst use); USES (Uses)
(dendritic BINAP based system for asym. hydrogenation of simple aryl ketones)

RN 286015-10-9 CAPLUS

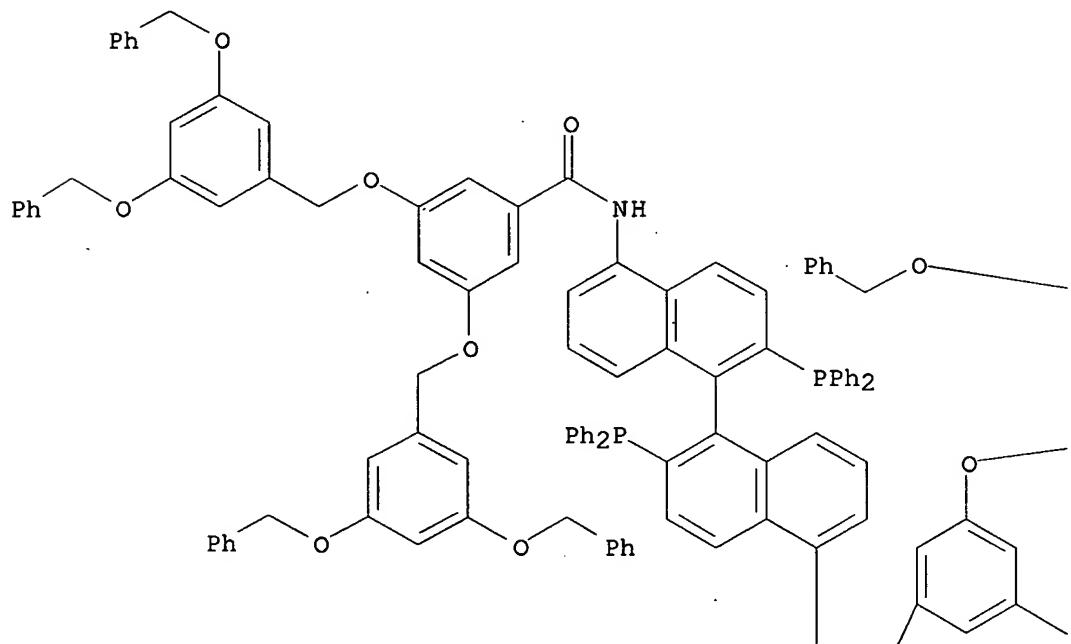
CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)- (9CI) (CA INDEX NAME)



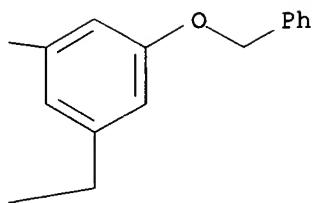
RN 286015-11-0 CAPLUS

CN Benzamide, N,N'-(*(1R)*-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)phenyl]methoxy]- (9CI) (CA INDEX NAME)

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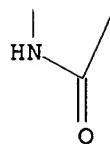


PAGE 1-B

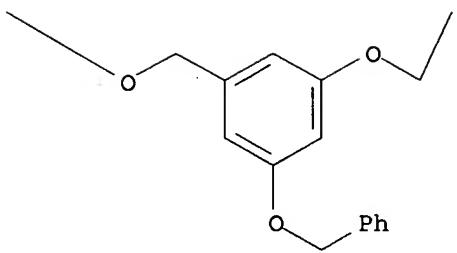


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PAGE 2-A

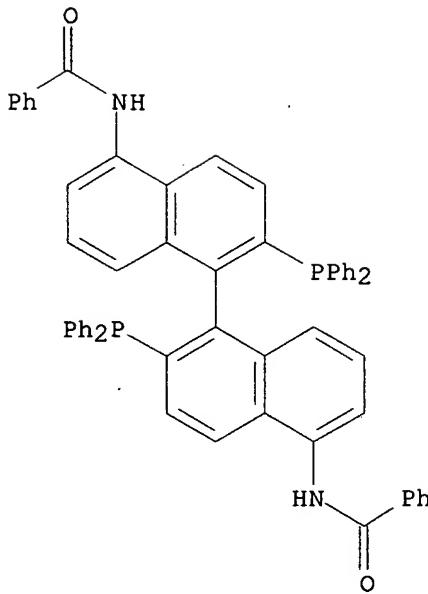


PAGE 2-B



RN 566932-78-3 CAPLUS

CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 20 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:540932 CAPLUS

DOCUMENT NUMBER: 137:310975

TITLE: Assembling behavior of BINAP derivative

AUTHOR(S): Wu, Peng; Deng, Guojun; Fan, Qinghua; Zeng, Qingdao;
Wang, Chen; Wan, Lijun; Bai, Chunli

CORPORATE SOURCE: Center for Molecular Science, Institute of Chemistry,
The Chinese Academy of Sciences, Beijing, 100080,
Peop. Rep. China

SOURCE: Chemistry Letters (2002), (7), 706-707
CODEN: CMLTAG; ISSN: 0366-7022

PUBLISHER: Chemical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 137:310975

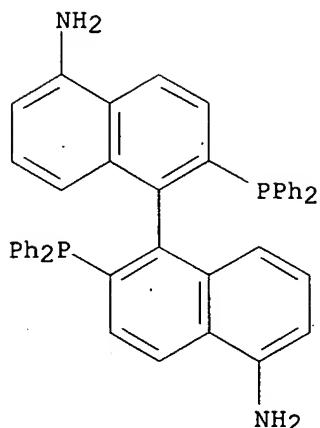
AB Ordered assembly of dendritic BINAP ligand was studied by using scanning tunneling microscopy (STM). Probably the mols. are arranged in a dimeric manner in the assembly.

IT 244260-43-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation with tris(decyloxy)benzoic acid to give dendritic BINAP ligand)

RN 244260-43-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



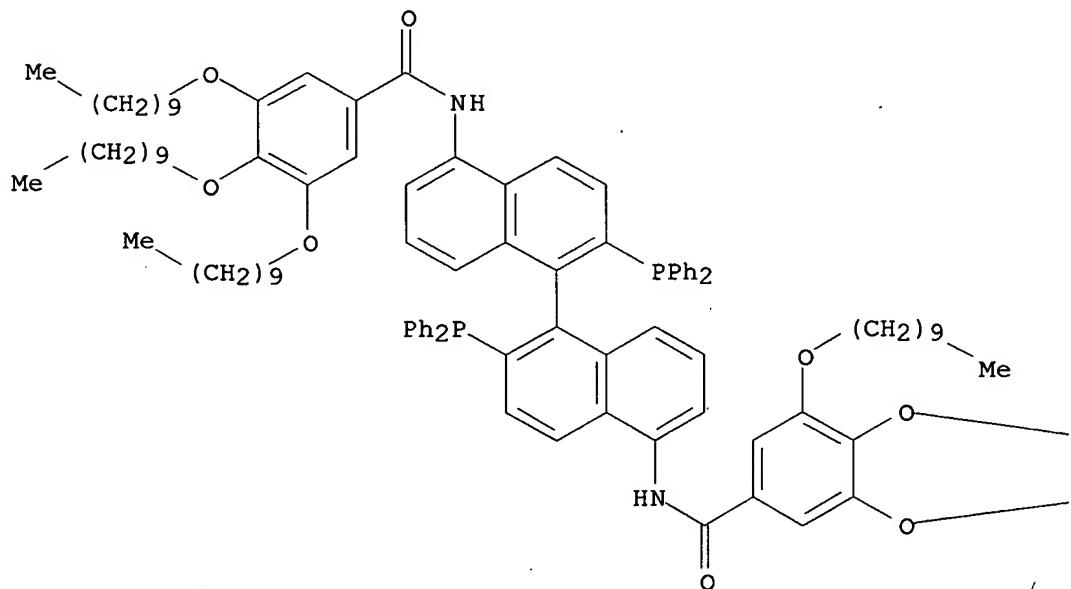
IT 471863-91-9P

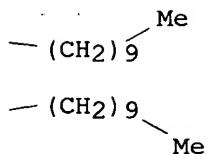
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and structural anal. by scanning tunneling microscopy)

RN 471863-91-9 CAPLUS

CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,4,5-tris(decyloxy)- (9CI) (CA INDEX NAME)

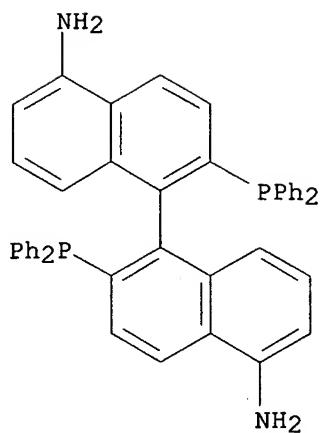
PAGE 1-A





REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 21 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2002:517295 CAPLUS
 DOCUMENT NUMBER: 138:89317
 TITLE: A novel system consisting of easily recyclable dendritic Ru-BINAP catalyst for asymmetric hydrogenation
 AUTHOR(S): Deng, Guo-Jun; Fan, Qing-Hua; Chen, Xiao-Min; Liu, Dong-Sheng; Chan, Albert S. C.
 CORPORATE SOURCE: Center for Molecular Science, Institute of Chemistry, The Chinese Academy of Sciences, Beijing, 100080, UK
 SOURCE: Chemical Communications (Cambridge, United Kingdom) (2002), (15), 1570-1571
 CODEN: CHCOFS; ISSN: 1359-7345
 PUBLISHER: Royal Society of Chemistry
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 138:89317
 AB Dendritic Ru-BINAP catalysts functionalized with alkyl chain at the periphery together with organic binary solvent system that exhibited phase separation induced by addition of a little water have been employed for asym. hydrogenation, leading to high catalytic activity and enantioselectivity as well as facile catalyst recycling.
 IT 244260-43-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (condensation reaction with dendritic oligomeric polyethers; asym.
 hydrogenation of aryl acrylic acids in presence of recyclable dendritic ruthenium-BINAP catalyst systems)
 RN 244260-43-3 CAPLUS
 CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
 (CA INDEX NAME)



IT 471863-91-9P 483985-21-3P 483985-23-5P

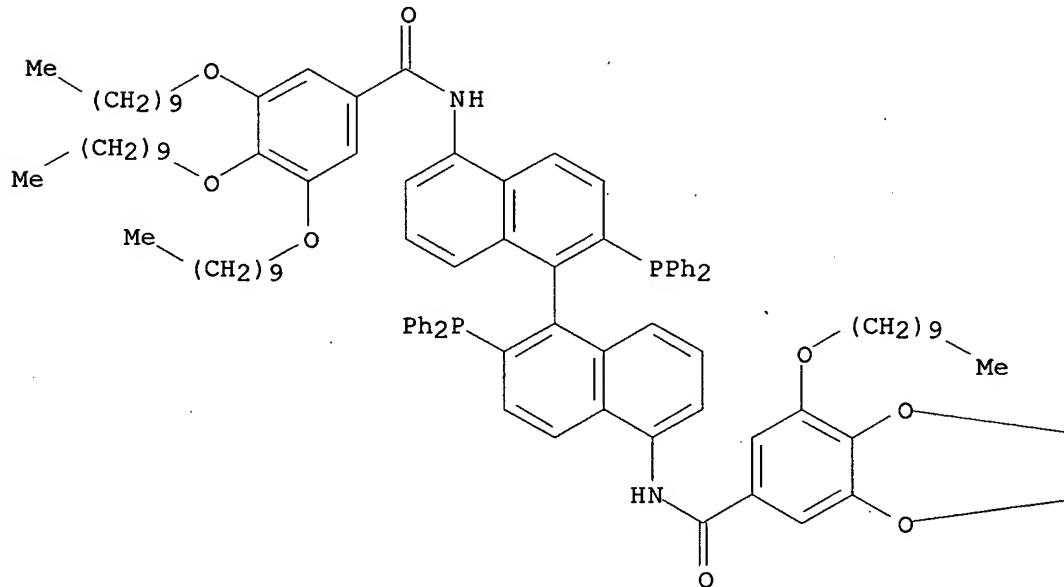
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

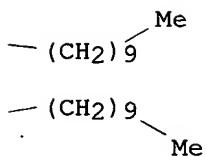
(ligand, complexation with ruthenium compound; preparation of recyclable dendritic ruthenium-BINAP catalyst systems and their catalytic activity in asym. hydrogenation of aryl acrylic acids)

RN 471863-91-9 CAPLUS

CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,4,5-tris(decyloxy)-(9CI) (CA INDEX NAME)

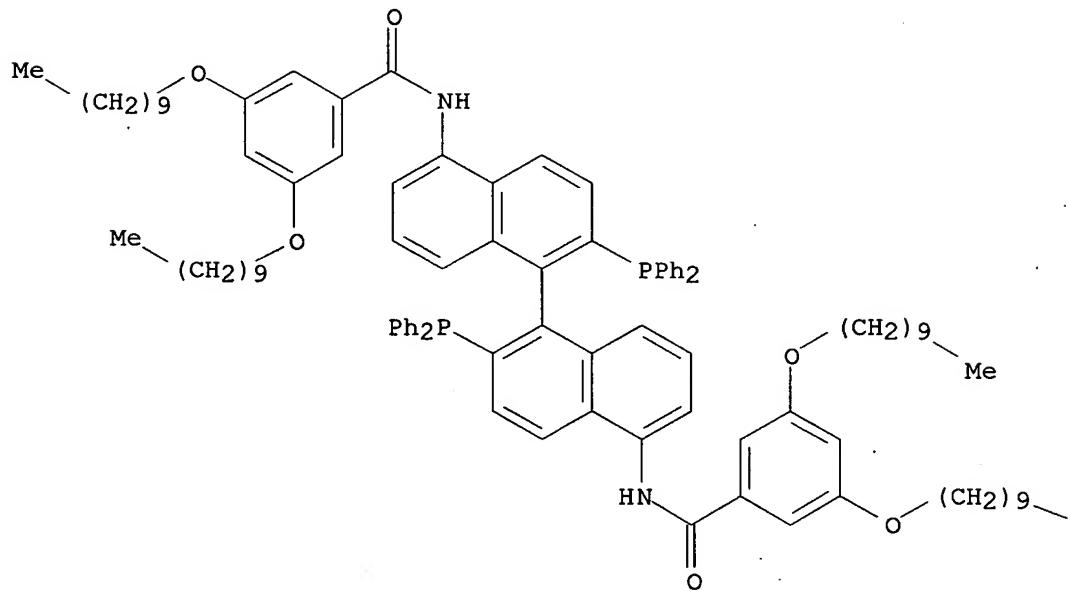
PAGE 1-A





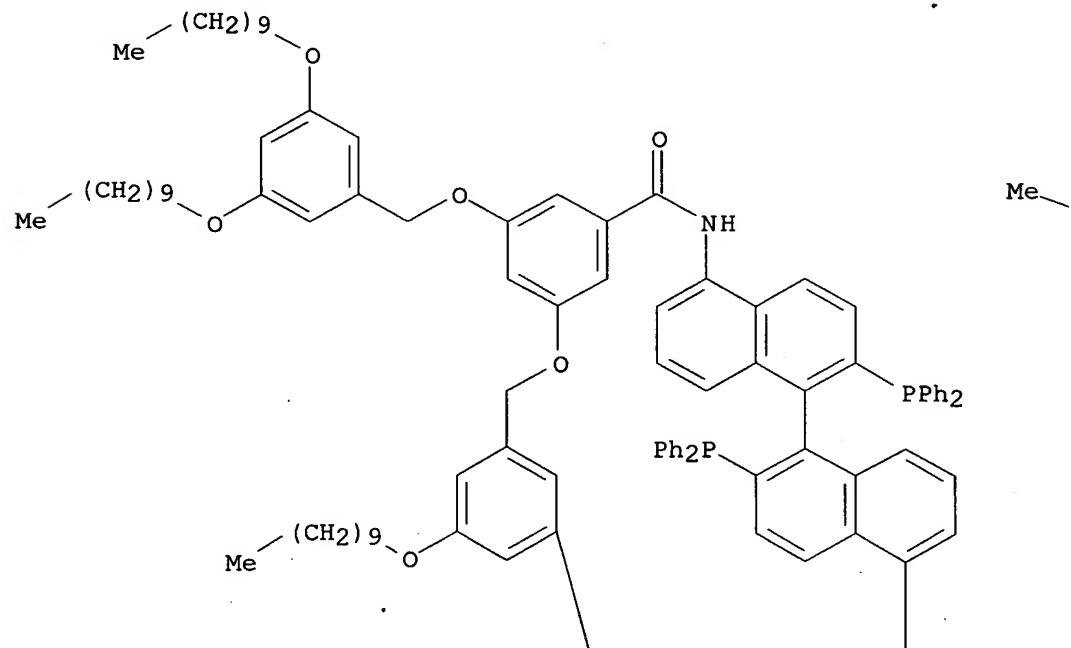
RN 483985-21-3 CAPLUS

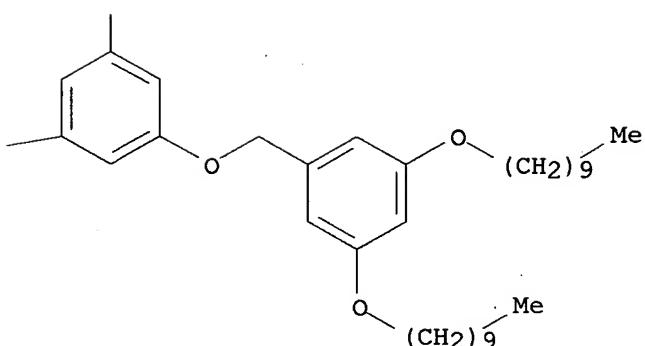
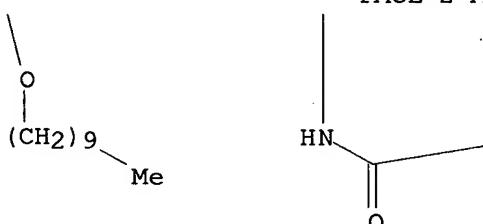
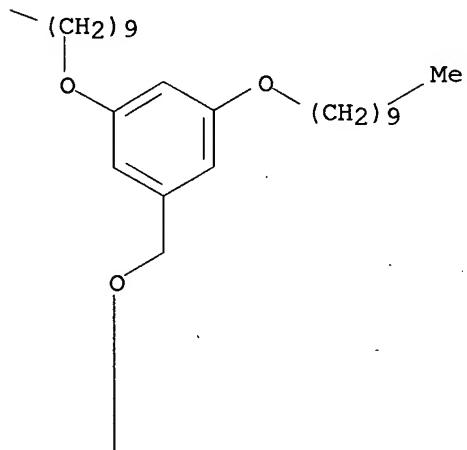
CN Benzamide, N,N'-(*(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl*)bis[3,5-bis(decyloxy)- (9CI) (CA INDEX NAME)



Me

RN 483985-23-5 CAPLUS
CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[3,5-bis(decyloxy)phenyl]methoxy] - (9CI) (CA INDEX NAME)

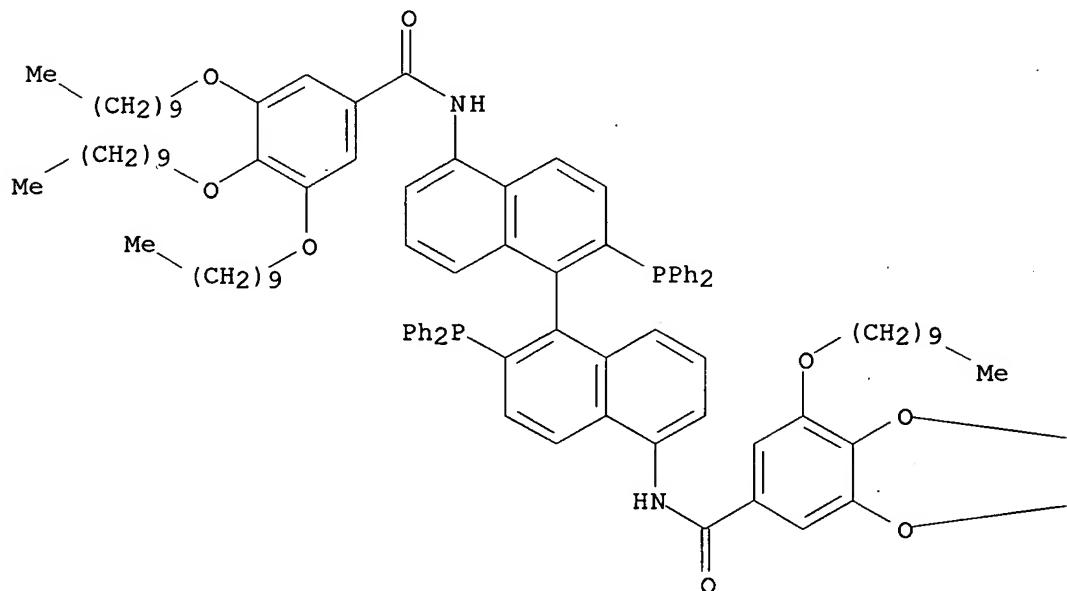




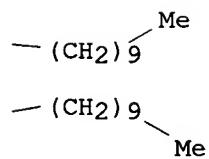
IT 471863-91-9D, complexes with ruthenium 483985-21-3D,
 complexes with ruthenium 483985-23-5D, complexes with ruthenium
 RL: CAT (Catalyst use); USES (Uses)
 (preparation and partition coefficient of recyclable dendritic
 ruthenium-BINAP
 catalyst systems and their catalytic activity in asym. hydrogenation of

aryl acrylic acids)
RN 471863-91-9 CAPLUS
CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,4,5-tris(decyloxy)-(9CI) (CA INDEX NAME)

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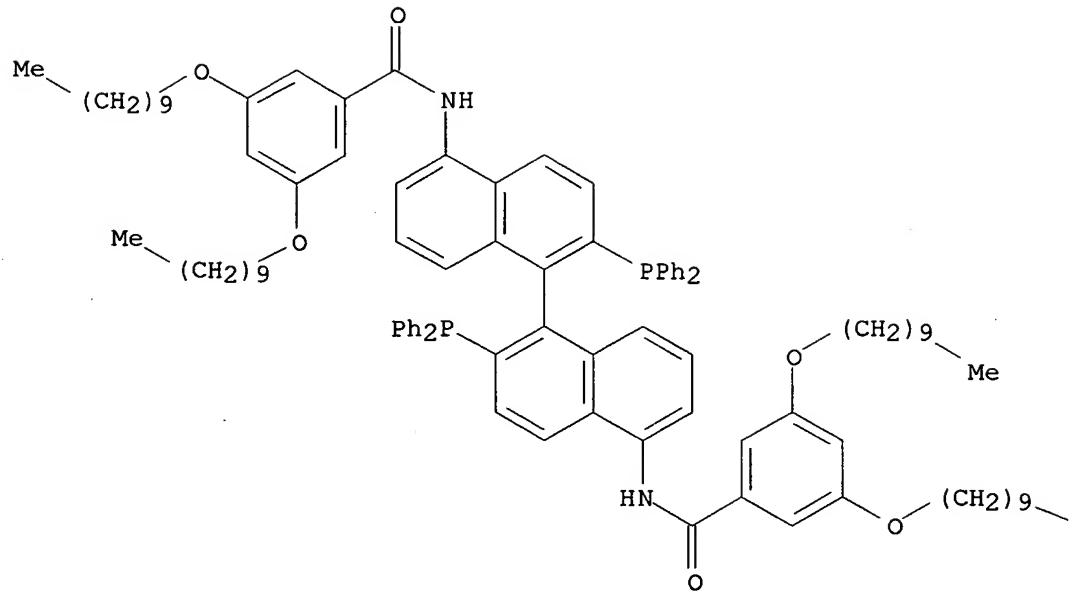


PAGE 1-B



RN 483985-21-3 CAPLUS
CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(decyloxy)-(9CI) (CA INDEX NAME)

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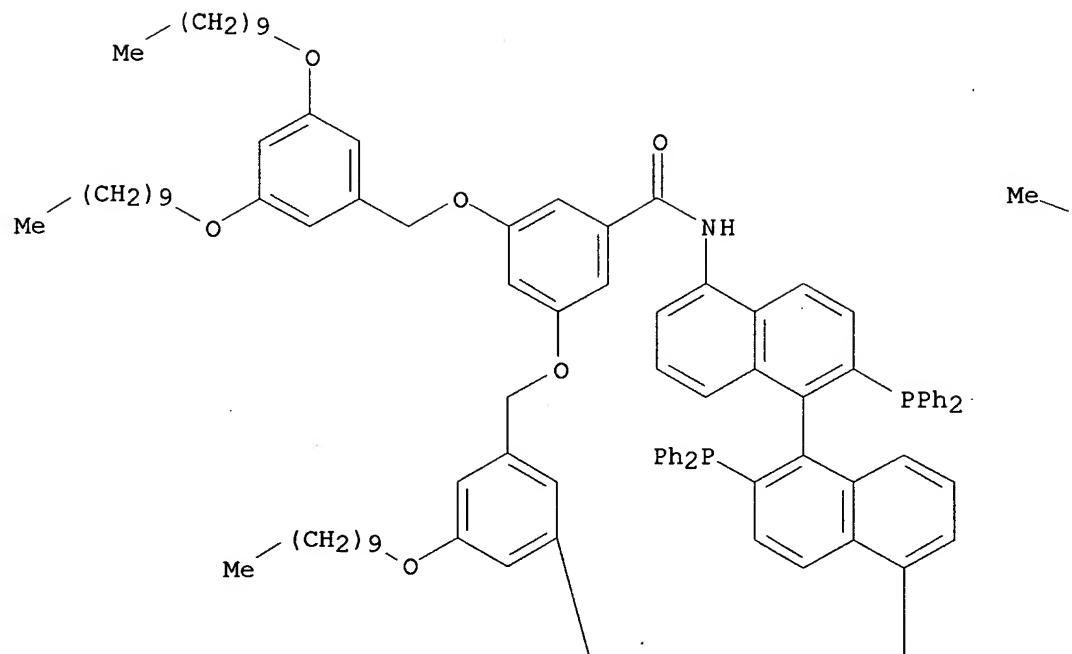
PAGE 1-B

Me

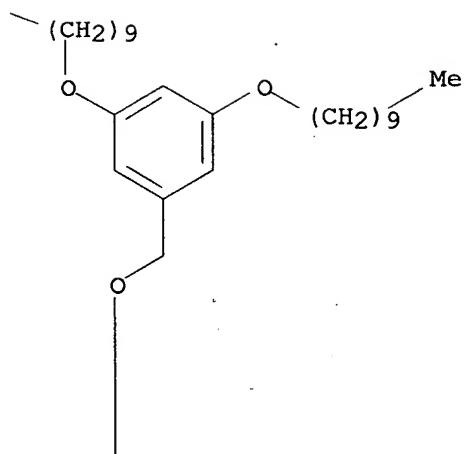
RN 483985-23-5 CAPLUS

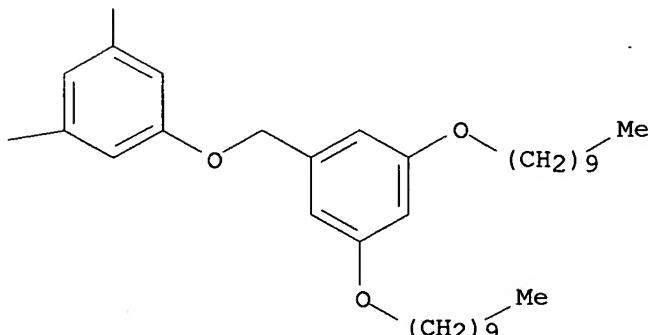
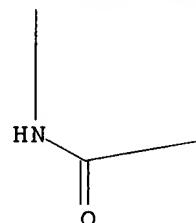
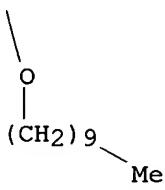
CN Benzamide, N,N'-(*(1R)*-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(decyloxy)phenyl]methoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B





REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 22 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:878892 CAPLUS

DOCUMENT NUMBER: 136:296494

TITLE: New soluble bifunctional polymeric chiral ligands for enantioselectively catalytic reactions

AUTHOR(S): Fan, Qing-Hua; Liu, Guo-Hua; Deng, Guo-Jun; Chen, Xiao-Min; Chan, Albert S. C.

CORPORATE SOURCE: Center for Molecular Science, LMRSS, The Chinese Academy of Sciences, Institute of Chemistry, Beijing, 100080, Peop. Rep. China

SOURCE: Tetrahedron Letters (2001), 42(51), 9047-9050

CODEN: TELEAY; ISSN: 0040-4039
PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two new soluble bifunctional polymeric ligands (*R,R*)-4 and (*R,R*)-5 have been prepared via the direct condensation reaction of (*R*)-3,3'-diformyl-1,1'-bi-2-naphthol (*R*)-1 with (*R*)-5,5'-diamino BINAP (*R*)-2 and with (*R*)-5,5'-diamino BINAPO (*R*)-3, resp. The different types of catalytic centers, BINOL and BINAP or BINAPO, were alternatively organized in a regular chiral polymer chain. Both polymeric ligands were found to be effective in the addition of diethylzinc to benzaldehyde either in the presence or in the absence of Ti(O*Pri*)₄ with different enantioselectivities. (*R,R*)-4/Ti(IV) catalyst, which showed similar efficiency to the parent catalyst BINOL/Ti(IV), was more enantioselective than (*R,R*)-5/Ti(IV). (*R,R*)-4 was also found to be highly effective in the Ru(II)-catalyzed asym. hydrogenation of 2-arylacrylic acids. The use of the co-polymer catalyst rather than a mixture of monomer catalysts not only simplified the recycling of the catalyst, but also improved the enantioselectivity and/or the activity in some cases.

IT 406933-98-0P 406933-99-1P 406935-39-5P

406936-18-3P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);

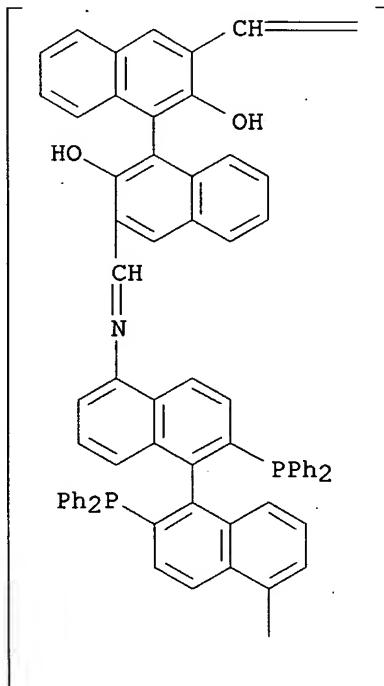
USES (Uses)

for
(ligand; preparation of new soluble bifunctional polymeric chiral ligands
enantioselectively catalytic reactions)

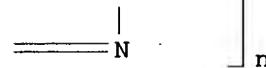
RN 406933-98-0 CAPLUS

CN Poly[nitrilo[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-
diyl]nitrilomethylidyne[(1R)-2,2'-dihydroxy[1,1'-binaphthalene]-3,3'-
diyl]methylidyne] (9CI) (CA INDEX NAME)

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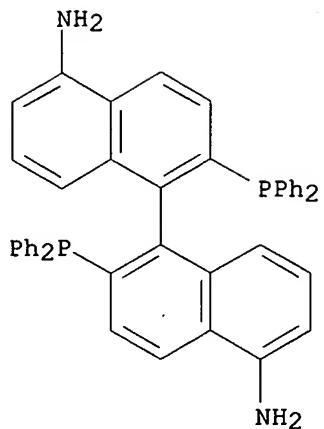
RN 406933-99-1 CAPLUS
CN Poly[nitrilo[(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl]nitrilomethylidyne[(1R)-2,2'-dihydroxy[1,1'-binaphthalene]-3,3'-diyl)methylidyne] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *
RN 406935-39-5 CAPLUS
CN [1,1'-Binaphthalene]-3,3'-dicarboxaldehyde, 2,2'-dihydroxy-, (1R)-, polymer with (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI) (CA INDEX NAME)

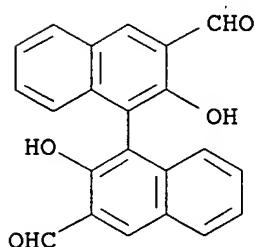
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CRN 244260-43-3
CMF C44 H34 N2 P2



CM 2

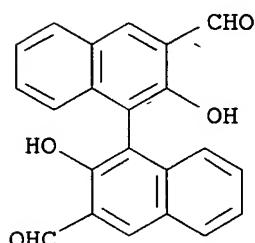
CRN 121314-69-0
CMF C22 H14 O4



RN 406936-18-3 CAPLUS
CN [1,1'-Binaphthalene]-3,3'-dicarboxaldehyde, 2,2'-dihydroxy-, (1R)-, polymer with (+)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diamine (9CI) (CA INDEX NAME)

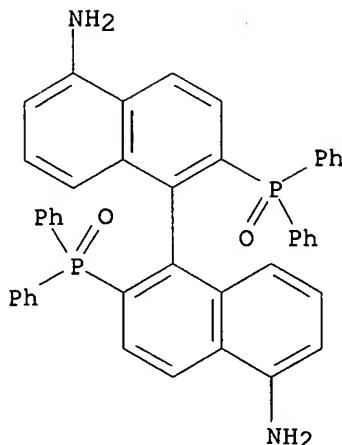
CM 1

CRN 121314-69-0
CMF C22 H14 O4



CM 2

CRN 114317-09-8
CMF C44 H34 N2 O2 P2



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 23 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:457144 CAPLUS

DOCUMENT NUMBER: 135:273246

TITLE: Preparation and use of MeO-PEG-supported chiral diphosphine ligands: soluble polymer-supported catalysts for asymmetric hydrogenation

AUTHOR(S): Fan, Q.-H.; Deng, G.-J.; Lin, C.-C.; Ch n, A. S. C.
CORPORATE SOURCE: Institute of Chemistry, Center for Molecular Science, LMRSS, The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Tetrahedron: Asymmetry (2001), 12(8), 1241-1247
CODEN: TASYE3; ISSN: 0957-4166

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two new chiral MeO-PEG-supported (R)-BINAP and (3R,4R)-Pyrphos ligands were synthesized and employed in the Ru(II)- and Rh(I)-catalyzed asym. hydrogenation of 2-(6-methoxy-2-naphthyl)propenoic acid (I) and prochiral enamides. These new soluble polymeric catalysts exhibited high activity and enantioselectivity. Enantiomeric excesses (e.e.s) in the ranges 90-96% and 86-96% were achieved in the hydrogenation of I and the enamides, resp. Furthermore, these catalysts could be recovered easily, and the recycled catalysts were shown to maintain their efficiency in subsequent reactions.

IT 363165-72-4DP, ruthenium binaphthyl/p-cymene complexes

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(MeO-PEG-supported chiral diphosphine ligands for soluble polymer-supported catalysts for asym. hydrogenation)

RN 363165-72-4 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine and oxirane, methyl ether, block (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O

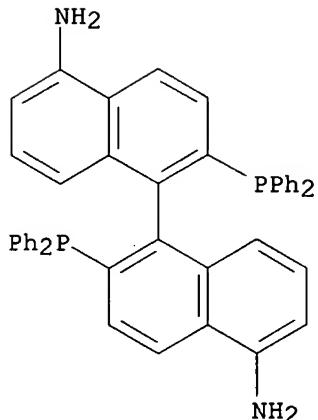
H₃C—OH

CM 2

CRN 363165-71-3
CMF (C₄₄ H₃₄ N₂ P₂ . C₈ H₄ Cl₂ O₂ . C₂ H₄ O)x
CCI PMS

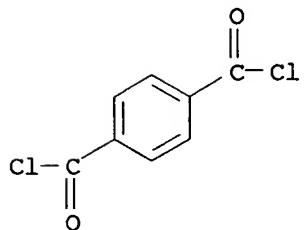
CM 3

CRN 244260-43-3
CMF C₄₄ H₃₄ N₂ P₂



CM 4

CRN 100-20-9
CMF C₈ H₄ Cl₂ O₂



CM 5

CRN 75-21-8
CMF C₂ H₄ O

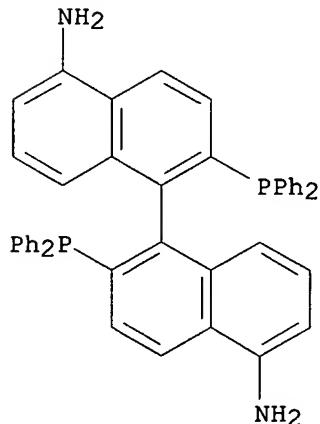


IT 244260-43-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(MeO-PEG-supported chiral diphosphine ligands for soluble
polymer-supported catalysts for asym. hydrogenation)

RN 244260-43-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



IT 363165-72-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(MeO-PEG-supported chiral diphosphine ligands for soluble
polymer-supported catalysts for asym. hydrogenation)

RN 363165-72-4 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (1R)-2,2'-
bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine and oxirane,
methyl ether, block (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O

H₃C-OH

CM 2

CRN 363165-71-3

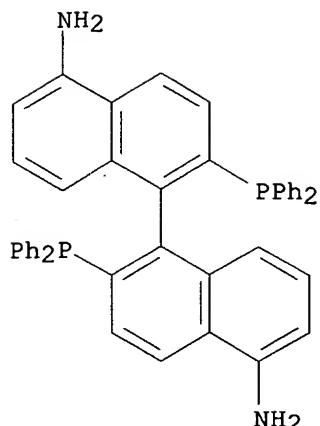
CMF (C44 H34 N2 P2 . C8 H4 Cl2 O2 . C2 H4 O)x

CCI PMS

CM 3

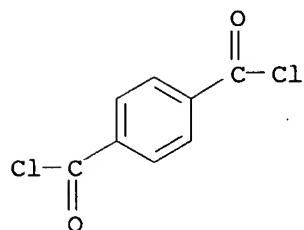
CRN 244260-43-3

CMF C44 H34 N2 P2



CM 4

CRN 100-20-9
CMF C8 H4 Cl2 O2



CM 5

CRN 75-21-8
CMF C2 H4 O



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 24 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:508669 CAPLUS

DOCUMENT NUMBER: 134:4502

TITLE: A highly effective water-soluble polymer-supported catalyst for the two-phase asymmetric hydrogenation: preparation and use of a PEG-bound BINAP ligand

AUTHOR(S): Fan, Q.-H.; Deng, G.-J.; Chen, X.-M.; Xie, W.-C.; Jiang, D.-Z.; Liu, D.-S.; Chan, A. S. C.

CORPORATE SOURCE: Institute of Chemistry, Center for Molecular Science, The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Journal of Molecular Catalysis A: Chemical (2000), 159(1), 37-43
CODEN: JMCCF2; ISSN: 1381-1169

PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 134:4502

AB A new type of amphiphilic PEG-bound BINAP ligand was synthesized through polycondensation of 5,5'-diamino BINAP, polyethylene glycol and terephthaloyl chloride in the presence of pyridine. It was shown that a ruthenium complex based on the new polymeric ligand was an effective catalyst for the asym. hydrogenation of prochiral α,β -unsatd. carboxylic acids in both Et acetate/water two-phase and in methanolic solvent systems. The activity and/or enantioselectivity in two-phase systems were observed to be higher than that in Et acetate or methanol-water homogeneous systems. The replacement of water with ethylene glycol increased the activity and enantioselectivity. The activity of the new catalyst was shown to be about 30 times higher in the two-phase hydrogenation of 2-(6'-methoxy-2'-naphthyl)-acrylic acid than the Ru(BINAP-4SO₃Na) catalyst without the long hydrophilic polymer chain, which illustrated the importance of the amphiphilic structure of the polymeric ligand.

IT 308795-87-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

for (preparation of water-soluble polyethylene glycol-supported BINAP catalyst
two-phase asym. hydrogenation)

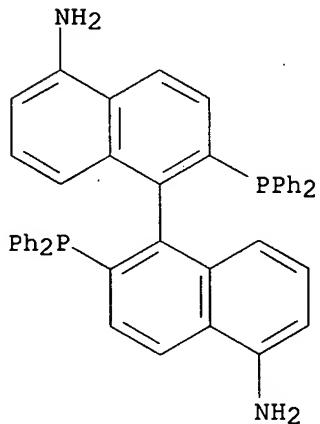
RN 308795-87-1 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine and α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl) (CA INDEX NAME)

CM 1

CRN 244260-43-3

CMF C44 H34 N2 P2

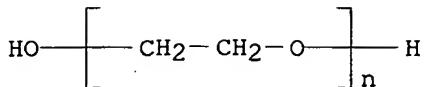


CM 2

CRN 25322-68-3

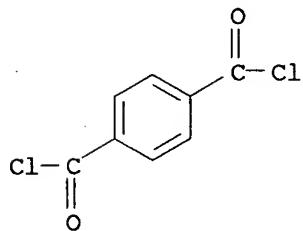
CMF (C₂ H₄ O)_n H₂ O

CCI PMS

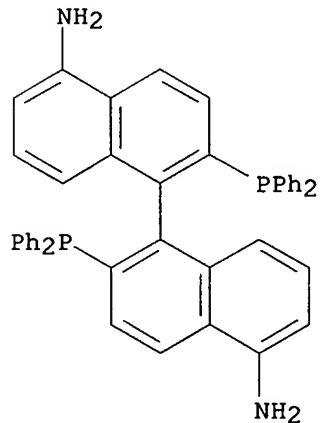


CM 3

CRN 100-20-9
CMF C8 H4 Cl2 O2



IT 244260-43-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of water-soluble polyethylene glycol-supported BINAP catalyst
for
two-phase asym. hydrogenation)
RN 244260-43-3 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 25 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:281660 CAPLUS
DOCUMENT NUMBER: 133:135081
TITLE: Highly effective and recyclable dendritic BINAP ligands for asymmetric hydrogenation
AUTHOR(S): Fan, Qing-Hua; Chen, Yong-Ming; Chen, Xiao-Min; Jiang, Da-Zhi; Xi, Fu; Chan, Albert S. C.
CORPORATE SOURCE: LMRSS, Cent. Mol. Sci., Inst. Chem., The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
SOURCE: Chemical Communications (Cambridge) (2000), (9),

789-790

CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER:

Royal Society of Chemistry

DOCUMENT TYPE:

Journal

LANGUAGE:

English

OTHER SOURCE(S):

CASREACT 133:135081

AB A series of dendritic BINAP ligands have been synthesized by reaction of (R)-5,5'-diamino-BINAP with 3,5-(PhCH₂O)C₆H₃CO₂H or 3,5-[3,5-(RO)C₆H₃CH₂O]C₆H₃CO₂H [R = CH₂Ph, 3,5-(PhCH₂O)C₆H₃CH₂] and their ruthenium complexes used as catalysts in asym. hydrogenation of 4-Me₂CHCH₂C₆H₄C(:CH₂)CO₂H to give (R)-ibuprofen in high ee.

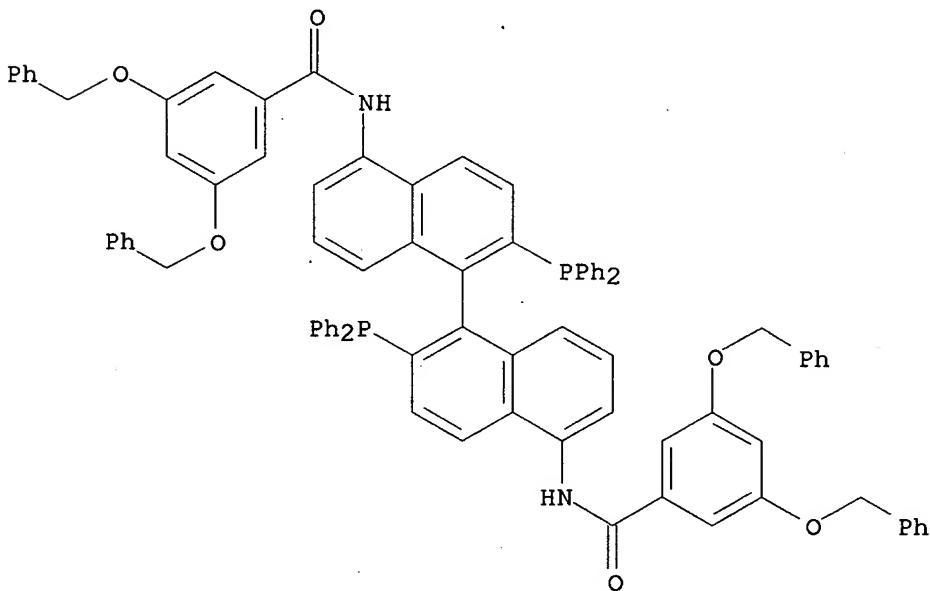
IT 286015-10-9P 286015-11-0P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(highly effective and recyclable dendritic BINAP ligands for asym. hydrogénéation)

RN 286015-10-9 CAPLUS

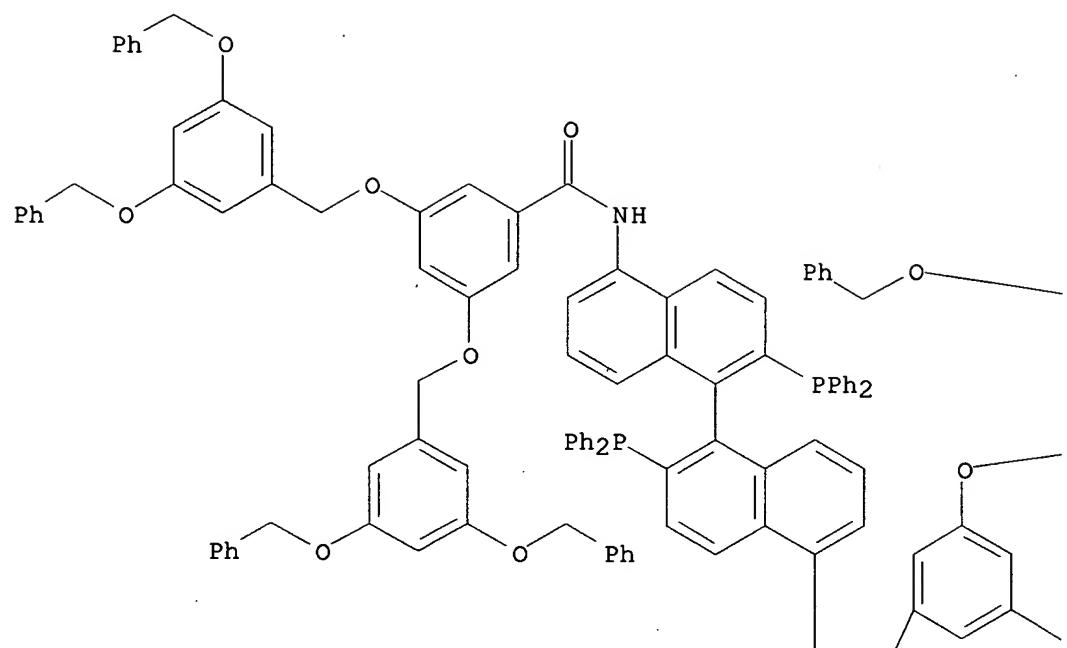
CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)- (9CI) (CA INDEX NAME)



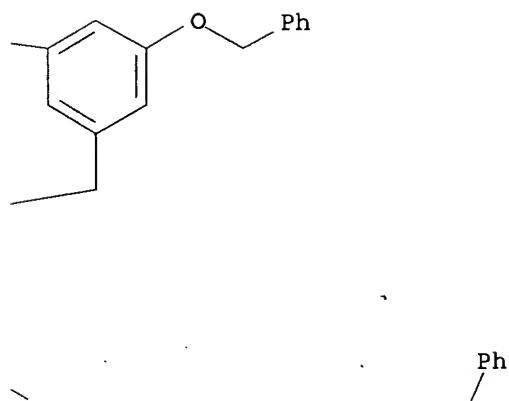
RN 286015-11-0 CAPLUS

CN Benzamide, N,N'-(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]- (9CI) (CA INDEX NAME)

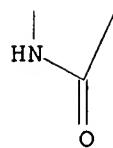
PAGE 1-A



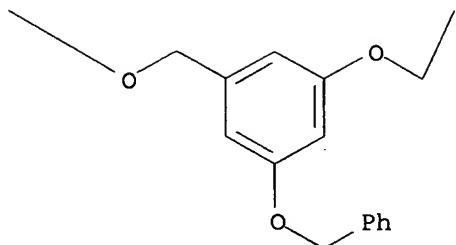
PAGE 1-B



PAGE 2-A



PAGE 2-B

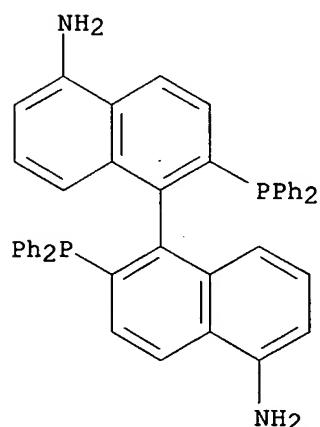


IT 244260-43-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(highly effective and recyclable dendritic BINAP ligands for asym.
hydrogenation)

RN 244260-43-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



REFERENCE COUNT:

39

THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 26 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:228629 CAPLUS

DOCUMENT NUMBER: 133:4462

TITLE: Catalytic use of chiral phosphine ligands in
asymmetric Pauson-Khand reactions

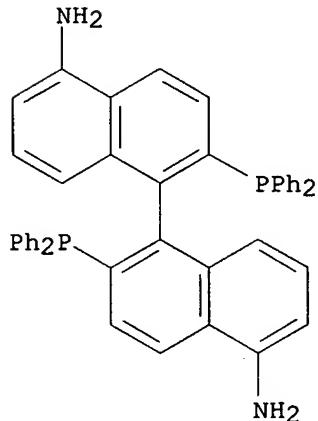
AUTHOR(S): Hiroi, Kunio; Watanabe, Takashi; Kawagishi, Ryoko;
Abe, Ikuko

CORPORATE SOURCE: Department of Synthetic Organic Chemistry, Tohoku
Pharmaceutical University, Miyagi, 981-8558, Japan

SOURCE: Tetrahedron: Asymmetry (2000), 11(3), 797-808

CODEN: TASYE3; ISSN: 0957-4166

PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 133:4462
 AB Catalytic asym. Pauson-Khand reactions with chiral bidentate phosphines as ligands have been successfully accomplished. The catalytic use of (S)-BINAP as a ligand was demonstrated to be the most effective in the cobalt-catalyzed reactions of 1,6-enynes, providing a facile entry to optically active 2-cyclopentenone derivs. with high enantioselectivity. A plausible mechanism for the asym. induction is proposed on the basis of the stereochem. outcome obtained.
 IT 244260-43-3
 RL: CAT (Catalyst use); USES (Uses)
 (asym. Pauson-Khand reaction catalyzed in presence of chiral phosphine ligands)
 RN 244260-43-3 CAPLUS
 CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
 (CA INDEX NAME)



REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 27 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1999:748353 CAPLUS
 DOCUMENT NUMBER: 132:12597
 TITLE: Soluble polyester-supported chiral phosphines
 INVENTOR(S): Chan, Albert Sun-Chi; Fan, Qing-Hua
 PATENT ASSIGNEE(S): The Hong Kong Polytechnic University, Hong Kong
 SOURCE: U.S., 15 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| US 5990318 | A | 19991123 | US 1998-72590 | 19980306 |
| PRIORITY APPLN. INFO.: | | | US 1998-72590 | 19980306 |

OTHER SOURCE(S): MARPAT 132:12597
 AB Novel soluble polyester-supported chiral phosphines have been prepared and have been used in the preparation of rhodium and ruthenium catalysts. Such polymer-supported catalysts show high catalytic activities and enantioselectivities. In the case of Ru(BINAP) catalyst supported on soluble polyester, the resulting catalysts were found to be more active than those

of the corresponding homogeneous Ru(BINAP) catalysts in the asym. hydrogenation of 2-arylpropenoic acids. These soluble polyester-supported catalysts can be easily separated from the reaction mixture and then be reused without loss of activity and selectivity. A typical polyester was manufactured by polymerization of 2S,4S-pentanediol 9.76, terephthaloyl chloride 9.95, and (S)-5,5'-diamino-BINAP in C5H5N-1,2-dichloroethane.

IT 244260-44-4P 244260-45-5P 251090-17-2P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(catalyst precursor; soluble polyester-supported chiral phosphines for catalysts for asym. hydrogenation of arylpropenoic acids)

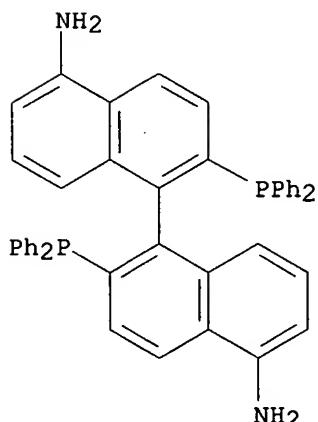
RN 244260-44-4 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and (1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

CRN 244260-42-2

CMF C44 H34 N2 P2

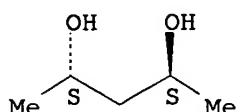


CM 2

CRN 72345-23-4

CMF C5 H12 O2

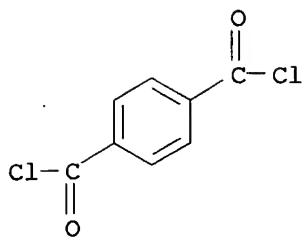
Absolute stereochemistry. Rotation (+).



CM 3

CRN 100-20-9

CMF C8 H14 O2



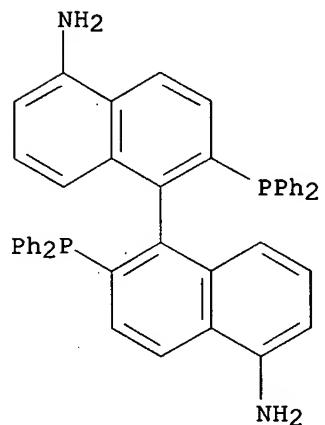
RN 244260-45-5 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

CRN 244260-43-3

CMF C44 H34 N2 P2

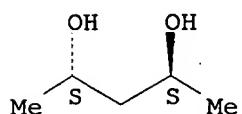


CM 2

CRN 72345-23-4

CMF C5 H12 O2

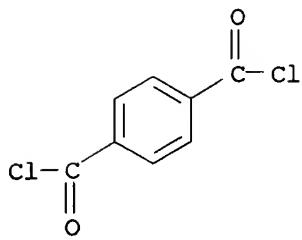
Absolute stereochemistry. Rotation (+).



CM 3

CRN 100-20-9

CMF C8 H12 O2



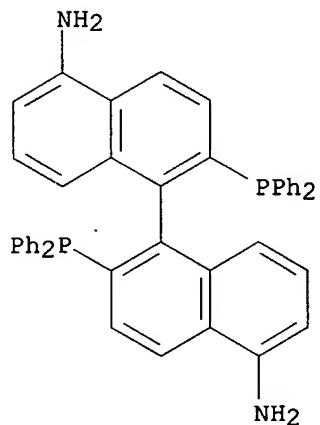
RN 251090-17-2 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine and 2,4-pentanediol (9CI) (CA INDEX NAME)

CM 1

CRN 244260-42-2

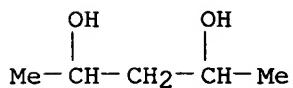
CMF C44 H34 N2 P2



CM 2

CRN 625-69-4

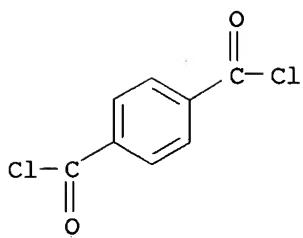
CMF C5 H12 O2



CM 3

CRN 100-20-9

CMF C8 H12 O2



IT 244260-44-4DP, ruthenium complexes 244260-45-5DP,
ruthenium complexes

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
USES (Uses)
(soluble polyester-supported chiral phosphines for catalysts for asym.
hydrogenation of arylpropenoic acids)

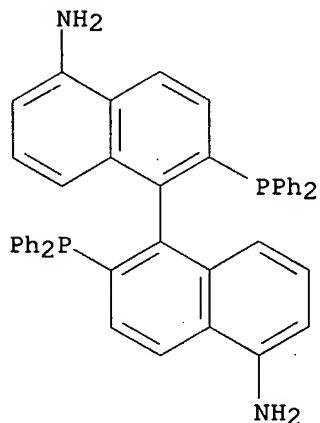
RN 244260-44-4 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and
(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

CRN 244260-42-2

CMF C44 H34 N2 P2

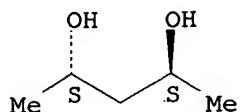


CM 2

CRN 72345-23-4

CMF C5 H12 O2

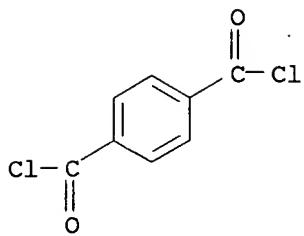
Absolute stereochemistry. Rotation (+).



CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2



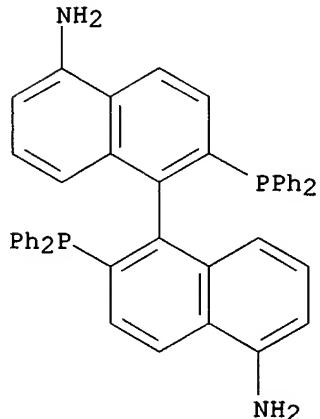
RN 244260-45-5 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

CRN 244260-43-3

CMF C44 H34 N2 P2

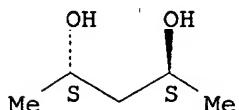


CM 2

CRN 72345-23-4

CMF C5 H12 O2

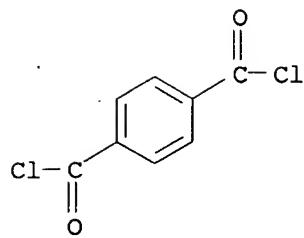
Absolute stereochemistry. Rotation (+).



CM 3

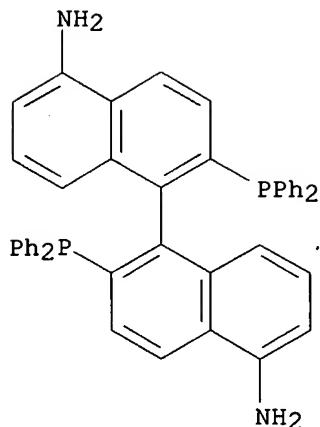
CRN 100-20-9

CMF C8 H4 Cl2 O2



REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

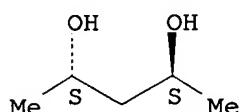
L3 ANSWER 28 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1999:474272 CAPLUS
 DOCUMENT NUMBER: 131:242777
 TITLE: Highly Effective Soluble Polymer-Supported Catalysts for Asymmetric Hydrogenation
 AUTHOR(S): Fan, Qing-hua; Ren, Chang-yu; Yeung, Chi-hung; Hu, Wen-hao; Chan, Albert S. C.
 CORPORATE SOURCE: Union Laboratory of Asymmetric Synthesis and Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University, Hong Kong
 SOURCE: Journal of the American Chemical Society (1999), 121(32), 7407-7408
 CODEN: JACSAT; ISSN: 0002-7863
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 131:242777
 AB Soluble nonracemic polymer supports are prepared from (2S,4S)-pentanediol, terephthaloyl chloride, and either (R)- or (S)-5,5'-diamino-BINAP; the catalysts prepared from the supports and a ruthenium precursor allow asym. hydrogenation in high yield and conversion and provide higher conversions and ee than the analogous solution phase ligands. E.g., dehydronaprofen [2-(6-methoxy-2-naphthyl)-2-propenoic acid] is hydrogenated in the presence of the (R)- or (S)-BINAP polymeric catalysts and triethylamine in toluene-methanol to give (R)- or (S)-naproxen, resp., in 93% ee and 100% conversion. The polymer-bound ruthenium hydrogenation catalysts can be precipitated from the reaction mixts. by cold methanol and filtered. The (R)-BINAP catalyst was treated with [Ru(cymene)Cl₂]₂ to prepare a recyclable hydrogenation catalyst which maintained its enantioselectivity and conversion through 10 hydrogenation cycles.
 IT 244260-45-5P
 RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (preparation of nonracemic soluble, polymeric, and recyclable catalyst supports
 for asym. hydrogenation)
 RN 244260-45-5 CAPLUS
 CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI) (CA INDEX NAME)
 CM 1
 CRN 244260-43-3
 CMF C44 H34 N2 P2



CM 2

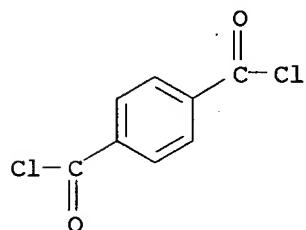
CRN 72345-23-4
CMF C5 H12 O2

Absolute stereochemistry. Rotation (+).



CM 3

CRN 100-20-9
CMF C8 H4 Cl2 O2

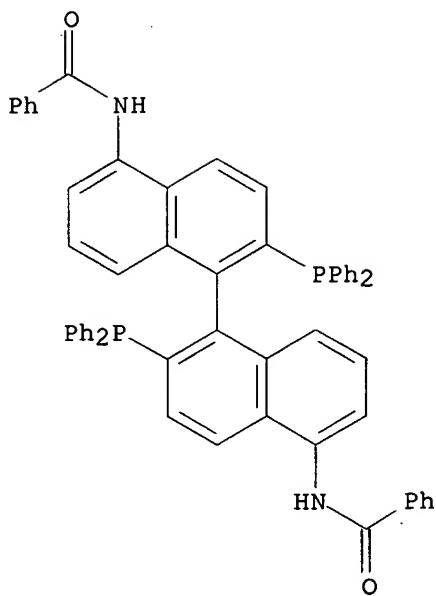


IT 244260-30-8P 244260-44-4P 244260-45-5DP,
ruthenium complex with
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)
(preparation of nonracemic soluble, polymeric, and recyclable catalyst
supports

for asym. hydrogenation)

RN 244260-30-8 CAPLUS

CN Benzamide, N,N'-(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis- (9CI) (CA INDEX NAME)



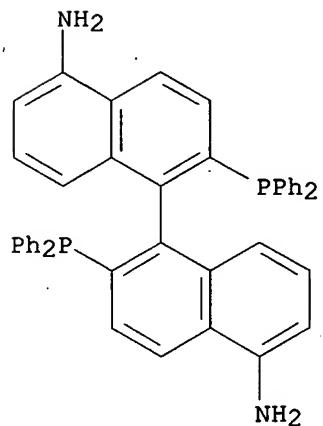
RN 244260-44-4 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and (1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

CRN 244260-42-2

CMF C44 H34 N2 P2

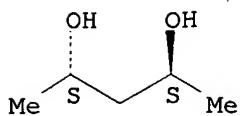


CM 2

CRN 72345-23-4

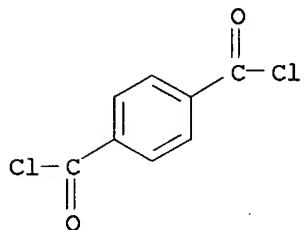
CMF C5 H12 O2

Absolute stereochemistry. Rotation (+).



CM 3

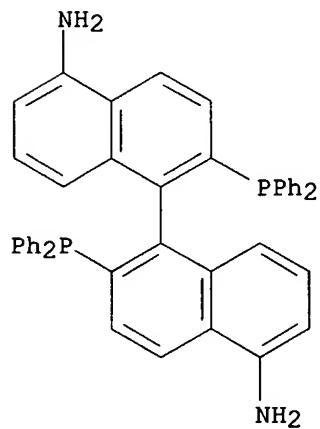
CRN 100-20-9
CMF C8 H12 O2



RN 244260-45-5 CAPLUS
CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

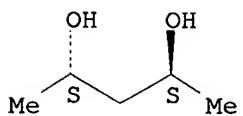
CRN 244260-43-3
CMF C44 H34 N2 P2



CM 2

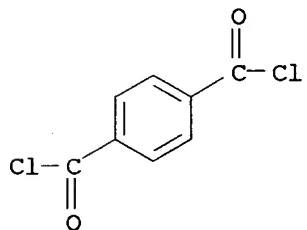
CRN 72345-23-4
CMF C5 H12 O2

Absolute stereochemistry. Rotation (+).



CM 3

CRN 100-20-9
CMF C8 H4 Cl2 O2



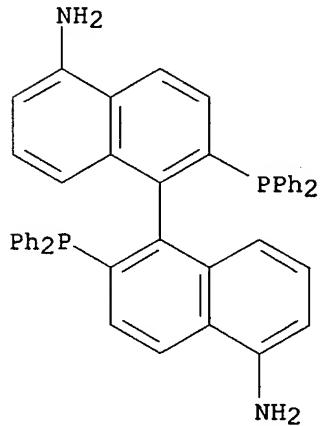
IT 244260-42-2 244260-43-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of nonracemic soluble, polymeric, and recyclable catalyst supports

for asym. hydrogenation)

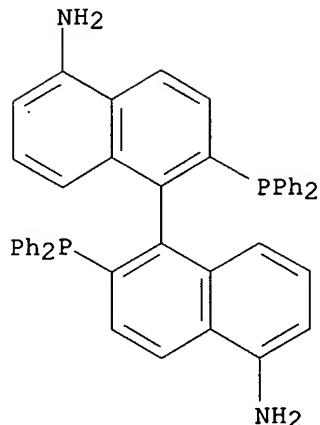
RN 244260-42-2 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1S)-
(CA INDEX NAME)



RN 244260-43-3 CAPLUS

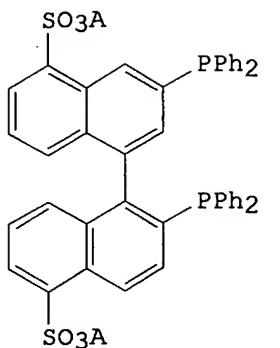
CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 29 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1993:581016 CAPLUS
 DOCUMENT NUMBER: 119:181016
 TITLE: Preparation of water-soluble alkali metal sulfonate-substituted binaphthylphosphine transition metal complexes and enantioselective hydrogenation method using them
 INVENTOR(S): Ishizaki, Takerou; Kumobayashi, Hidenori
 PATENT ASSIGNEE(S): Takasago International Corp., Japan
 SOURCE: Eur. Pat. Appl., 9 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------------------------|--|----------|----------------------------------|---------------------------|
| EP 544455 | A1 | 19930602 | EP 1992-310561 | 19921119 |
| EP 544455 | B1 | 19970212 | | |
| R: CH, DE, FR,
JP 05170780 | GB, IT, LI
A | 19930709 | JP 1991-331535 | 19911121 |
| JP 2736947 | B2 | 19980408 | | |
| US 5274146 | A | 19931228 | US 1992-977638 | 19921117 |
| US 5324861 | A | 19940628 | US 1993-116583 | 19930907 |
| PRIORITY APPLN. INFO.: | | | JP 1991-331535
US 1992-977638 | A 19911121
A3 19921117 |
| OTHER SOURCE(S): GI | CASREACT 119:181016; MARPAT 119:181016 | | | |



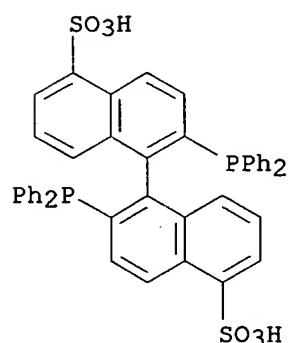
AB [M(X)n(Q)(SO₃A-BINAP)]Y (M = Ru, Ir, Rh, Pd, etc.; SO₃A-BINAP = tertiary phosphine represented by formula I (A = alkali metal atom), X = Cl, Br, iodo; n = 0, 1; Q = benzene or p-cymene, Y = Cl, Br, iodo, ClO₄, PF₆, BF₄) were prepared and shown to be catalysts for the enantioselective hydrogenation of olefins, ketones, and imines.

IT 150271-78-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reactions of, with ruthenium and iridium complexes, enantioselective hydrogenation catalyst from)

RN 150271-78-6 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-disulfonic acid, 2,2'-bis(diphenylphosphino)-, disodium salt, (R)- (9CI) (CA INDEX NAME)



●2 Na

L3 ANSWER 30 OF 30 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1988:204837 CAPLUS

DOCUMENT NUMBER: 108:204837

ORIGINAL REFERENCE NO.: 108:33665a,33668a

TITLE: Preparation of chiral phosphine compounds

INVENTOR(S): Okano, Tamon; Shimano, Yasunobu; Konishi, Hisatoshi; Kiji, Jitsuo; Fukuyama, Keiichi; Kumobayashi, Hidenori; Akutagawa, Susumu

PATENT ASSIGNEE(S): Takasago Perfumery Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

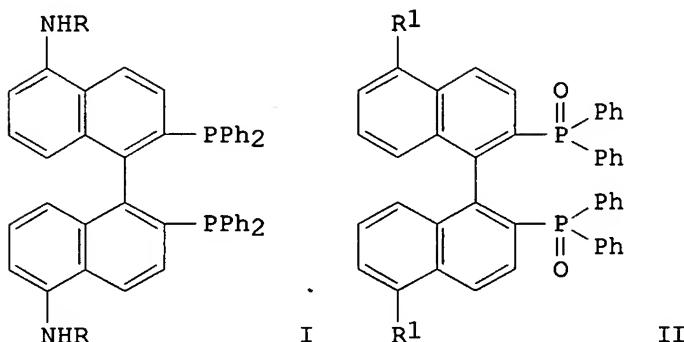
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------------|------|----------|-----------------|------------|
| JP 62178594 | A | 19870805 | JP 1986-19203 | 19860201 |
| JP 05011117 | B | 19930212 | | |
| EP 235450 | A1 | 19870909 | EP 1986-309141 | 19861121 |
| R: CH, DE, FR, GB, LI, NL | | | | |
| US 4705895 | A | 19871110 | US 1986-937805 | 19861121 |
| PRIORITY APPLN. INFO.: | | | JP 1986-19203 | A 19860201 |
| GI | | | | |



AB Phosphine derivs. (I; R = H, Ac), useful in asym. synthesis, are prepared. Nitration of oxide (+)-II (R1 = H) in Ac_2O gave 98.6% dinitro derivative (+)-II (R1 = NO_2), which was reduced over SnCl_2 in EtOH-HCl to give 85.3% diamine derivative (+)-II (R1 = NH_2) (III). Reduction of III in MePh over SiHCl_3

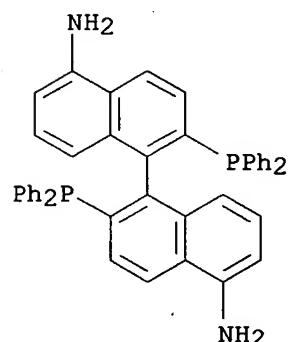
and Pr_3N gave 70.5% phosphine (+)-I (R = H) (IV), which was refluxed with Ac_2O and Pr_3N under N to give 76.0% diamide (+)-I (R = Ac). Asym. isomerization of $\text{Me}_2\text{C:CHCH}_2\text{CH}_2\text{CMe:CHCH}_2\text{NEt}_2$ in the presence of Rh-IV-norbornadiene ClO_4^- - catalyst gave $\text{Me}_2\text{C:CHCH}_2\text{CH}_2\text{CHMeCH:CHNEt}_2$ with 39.68 conversion.

IT 114317-10-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and complexation of, with rhodium norbornadiene perchlorate)

RN 114317-10-1 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (+)-
(9CI) (CA INDEX NAME)



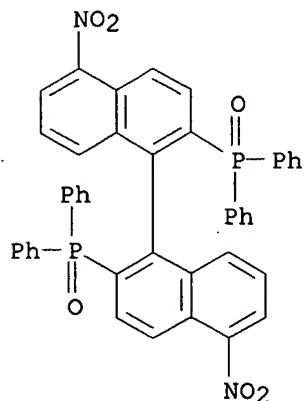
IT 114317-08-7P 114317-09-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)
(preparation and reduction of)

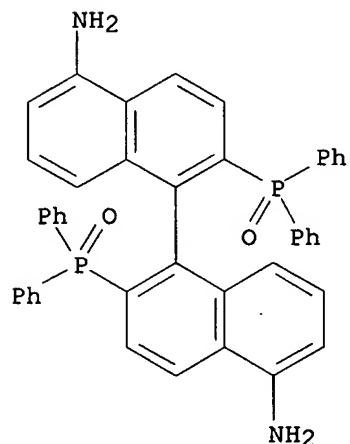
RN 114317-08-7 CAPLUS

CN Phosphine oxide, (5,5'-dinitro[1,1'-binaphthalene]-2,2'-diyl)bis[diphenyl-, (+)- (9CI) (CA INDEX NAME)



RN 114317-09-8 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphinyl)- (CA INDEX NAME)

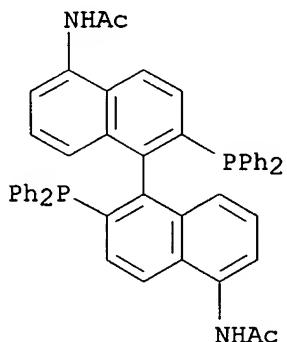


IT 114317-11-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 114317-11-2 CAPLUS

CN Acetamide, N,N'-[2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis-, (+)- (9CI) (CA INDEX NAME)



\Rightarrow

---Logging off of STN---

\Rightarrow

Executing the logoff script...

=> LOG Y

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|--|------------------|---------------|
| FULL ESTIMATED COST | 164.94 | 344.89 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION |
| CA SUBSCRIBER PRICE | -24.00 | -24.00 |

STN INTERNATIONAL LOGOFF AT 08:49:17 ON 01 APR 2008

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID: ssspta1621cn

PASSWORD:

TERMINAL: (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS 1 Web Page for STN Seminar Schedule - N. America
NEWS 2 OCT 02 CA/CAplus enhanced with pre-1907 records from Chemisches Zentralblatt
NEWS 3 OCT 19 BEILSTEIN updated with new compounds
NEWS 4 NOV 15 Derwent Indian patent publication number format enhanced
NEWS 5 NOV 19 WPIX enhanced with XML display format
NEWS 6 NOV 30 ICSD reloaded with enhancements

NEWS 7 DEC 04 LINPADOOCDB now available on STN
NEWS 8 DEC 14 BEILSTEIN pricing structure to change
NEWS 9 DEC 17 USPATOLD added to additional database clusters
NEWS 10 DEC 17 IMSDRUGCONF removed from database clusters and STN
NEWS 11 DEC 17 DGENE now includes more than 10 million sequences
NEWS 12 DEC 17 TOXCENTER enhanced with 2008 MeSH vocabulary in MEDLINE segment
NEWS 13 DEC 17 MEDLINE and LMEDLINE updated with 2008 MeSH vocabulary
NEWS 14 DEC 17 CA/CAplus enhanced with new custom IPC display formats
NEWS 15 DEC 17 STN Viewer enhanced with full-text patent content from USPATOLD
NEWS 16 JAN 02 STN pricing information for 2008 now available
NEWS 17 JAN 16 CAS patent coverage enhanced to include exemplified prophetic substances
NEWS 18 JAN 28 USPATFULL, USPAT2, and USPATOLD enhanced with new custom IPC display formats
NEWS 19 JAN 28 MARPAT searching enhanced
NEWS 20 JAN 28 USGENE now provides USPTO sequence data within 3 days of publication
NEWS 21 JAN 28 TOXCENTER enhanced with reloaded MEDLINE segment
NEWS 22 JAN 28 MEDLINE and LMEDLINE reloaded with enhancements
NEWS 23 FEB 08 STN Express, Version 8.3, now available
NEWS 24 FEB 20 PCI now available as a replacement to DPCI
NEWS 25 FEB 25 IFIREF reloaded with enhancements
NEWS 26 FEB 25 IMSPRODUCT reloaded with enhancements
NEWS 27 FEB 29 WPINDEX/WPIIDS/WPIX enhanced with ECLA and current U.S. National Patent Classification
NEWS 28 MAR 31 IFICDB, IFIPAT, and IFIUDB enhanced with new custom IPC display formats
NEWS 29 MAR 31 CAS REGISTRY enhanced with additional experimental spectra
NEWS 30 MAR 31 CA/CAplus and CASREACT patent number format for U.S. applications updated
NEWS 31 MAR 31 LPCI now available as a replacement to LDPCI
NEWS 32 MAR 31 EMBASE, EMBAL, and LEMBASE reloaded with enhancements

NEWS EXPRESS FEBRUARY 08 CURRENT WINDOWS VERSION IS V8.3,
AND CURRENT DISCOVER FILE IS DATED 20 FEBRUARY 2008

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FILE 'HOME' ENTERED AT 10:55:37 ON 01 APR 2008

=>

---Logging off of STN---

\Rightarrow

Executing the logoff script...

=> LOG Y

| COST IN U.S. DOLLARS | SINCE FILE
ENTRY | TOTAL
SESSION |
|----------------------|---------------------|------------------|
| FULL ESTIMATED COST | 0.21 | 0.21 |

STN INTERNATIONAL LOGOFF AT 10:55:46 ON 01 APR 2008